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MATERIALS AND METHODS FOR TEACHING STRUCTURAL AND GENERATIVE GRAMMAR TO HIGH SCHOOL STUDENTS AND THEIR TEACHERS. FINAL REPORT.

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FROM 1965 THROUGH 1967, THE NORTHERN ILLINOIS UNIVERSITY CURRICULUM CENTER WAS ENGAGED IN DEVELOPING WORKABLE MATERIALS IN STRUCTURAL AND TRANSFORMATIONAL GRAMMARS FOR THE 11TH AND 12TH GRADES AND IN INVESTIGATING THE EFFECT OF INSTRUCTION IN THESE UPON STUDENT WRITING AND UPON STUDENT AND TEACHER ATTITUDES TOWARD THE STUDY OF LINGUISTICS. AFTER ANALYZING GRAMMAR TEXTBOOKS AND STUDYING PHONOLOGY, MORPHOLOGY, AND TRANSFORMATIONAL SYNTAX, 15 EXPERIENCED TEACHERS DEVELOPED TEACHING UNITS ON PHONOLOGY, MORPHOLOGY, HISTORY OF THE LANGUAGE, AND TRANSFORMATIONAL GRAMMAR. THE EFFECT OF INSTRUCTION IN THE NEW GRAMMARS ON STUDENT WRITING WAS INCONCLUSIVE. HOWEVER, RESEARCH DID REVEAL THAT THESE GRAMMARS CAN (1) BE TAUGHT SUCCESSFULLY IN SENIOR HIGH SCHOOL, BY TEACHERS WHOSE TRAINING WAS IN TRADITIONAL GRAMMAR, TO BOTH THOSE STUDENTS WHO ARE THOROUGHLY INDOCTRINATED IN TRADITIONAL GRAMMAR AND TO THOSE WHO KNOW LITTLE GRAMMAR, (2) BE INCORPORATED INTO THE STUDY OF LITERATURE, TRADITIONAL GRAMMAR, AND COMPOSITION, AND CORRELATED WITH FOREIGN LANGUAGE AND SPEECH, (3) MAKE STUDENTS MORE SENSITIVE TO THEIR LANGUAGE--ITS STRUCTURE AND THEIR OWN WRITING ERRORS, (4) SHOW TEACHERS EXPLICIT AND UNAMBIGUOUS WAYS TO HELP STUDENTS ELIMINATE ERRORS, AND (5) MOTIVATE STUDENTS AND TEACHERS TO FURTHER ENGLISH LANGUAGE STUDY. THESE FINDINGS INDICATE THAT MOST OF THE MATERIALS COULD BE INTRODUCED EARLIER IN THE SCHOOL CURRICULUM. (RD)

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August 31, 1967

U. S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Materials and Methods for Teaching Structural and Generative Grammar to High School Students and Their Teachers

Project No. H-144
Contract No. OE-4-10-252

Andrew MacLeish
William R. Seat III

August 31, 1967

The research reported herein was performed pursuant to a contract with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

Northern Illinois University

DeKalb, Illinois

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CONTENTS

Page

Introduction.. 1
    1. The Problem.. 1
    2. Purposes and Objectives.. 1

Method.. 2

Results.. 20
    1. Summary of Materials.. 20
    2. Use of Materials.. 22
    3. Summary of Reaction to Materials.. 22
    4. Relevance to Writing.. 24
    5. Adjunctive Results.. 24
    6. Summary of Specific Findings.. 25

Discussion.. 26
    1. Phonology.. 27
    2. Reaction to the Phonology.. 49
    3. Morphology.. 51
    4. Reaction to the Morphology.. 61
    5. History of the Language.. 62
    6. Reaction to the History of the Language.. 71
    7. Transformational Grammar.. 72
    8. Reaction to the Transformational Grammar.. 90
    9. Relevance to Writing.. 92
    10. Adjunctive Results.. 95

Conclusions.. 99

Recommendations.. 103

Implications.. 106

Summary.. 108

Bibliography.. 113

ERIC Report Resume Form.. 116

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INTRODUCTION

1. The Problem

From its inception in 1963, the Northern Illinois University Curriculum Center addressed itself to three general problems: (1) the apparent inadequacy of conventional methods of teaching grammar and composition in high schools and colleges, (2) the lack of adequate texts by which the new grammars can be transmitted to students and teachers, and (3) the lack of experience in devising methods to teach the new grammars to teachers and their students. (See pages 3 and 4 of Proposal H-144) These inadequacies were especially apparent at the senior high school level, and few texts were designed to fit into sequential high school English curricula. Almost nothing was available for use by teachers of grades eleven and twelve. Much work was needed in devising effective methods of presenting the new approaches. Simple and sensible materials utilizing the new grammars were in great demand by teachers who were themselves often inadequately prepared to cope with the latest linguistic theories. Also, units in grammar were needed which could be incorporated easily into the context of the senior high school language arts program, and which could logically build upon the foundation of traditional grammar given students in the elementary grades.

2. Purposes and Objectives

The general purpose of the project was to devise workable materials illustrating recent developments in linguistic description that have received fairly wide acceptance among professional linguists. These materials were to be used in the training of a selected group of high school teachers so that they would have firm theoretical and practical groundwork in those aspects of structural and generative grammar most relevant to the teaching of composition. As the training of the teachers proceeded, the materials were to be adapted for use in the high school classroom. Finally, the materials were to be used by the participating teachers in their own classrooms, and revised on the basis of empirical evidence.

The specific objectives of the project were these:
1. the development of workable materials in the new grammars,
2. the investigation of the effect of instruction in structural and transformational grammar upon student writing,
3. the effect of instruction in the new grammars upon student and teacher attitudes toward the study of linguistics.

METHOD

As soon as the Northern Illinois Curriculum Center was funded, the Director and Associate Director proceeded to select the fifteen high school teachers who were to aid in the development of materials and in the experimentation based upon the materials. Letters were mailed to principals and heads of English departments of two hundred high schools in northern Illinois. These letters invited each administrator to nominate a competent English teacher from his staff as a candidate for the seminar. Minimum requirements for nominees were these: five years of experience teaching English at the high school level; a bachelors degree in English with some work in linguistics; permission to teach experimental linguistics materials for two years at the eleventh and twelfth grade levels; ability and willingness to work in residence on campus at Northern Illinois University for two summers. Fifty-two nominations were received. Each nominee was then requested to write an essay stating his philosophy of teaching composition, his attitude toward traditional, structural, and transformational grammars, and his reasons for wanting to participate in the seminars of the Curriculum Center. Screening took place on the basis of the nominating questionnaires and the essays, and eighteen candidates were invited to campus for interviews by the project director and the associate director. The fifteen participants were selected. An effort was made to select competent and experienced teachers. Furthermore, heterogeneity in scholastic background, experience, and teaching situation was considered desirable. The participants are graduates of fifteen different colleges and universities. They teach in high schools of varying sizes and types: Represented are private and public schools from cities and from small towns; enrollment ranges from several thousand to a few hundred. There are schools from wealthy Chicago suburbs and from underprivileged areas. The class size ranged from fifteen to forty. Some classes were remedial; some were honors sections for college-bound seniors.

The following high school teachers participated in the Curriculum Center:

Ralph Blackman	East High School Aurora, Illinois
David Bloomstrand	St. Charles High School St. Charles, Illinois
William Cantrall	Lyons Township High School Downers Grove, Illinois
Sister Mary Celsa	Boylan High School Rockford, Illinois
Frank Church	Geneva High School Geneva, Illinois

Mary Endres	Zion-Benton High School Zion, Illinois
Sister John Eudes	Aquin High School Freeport, Illinois
Margaret Miller	Lena-Winslow High School Lena, Illinois
Marion Olson	North Park Academy Chicago, Illinois
Sister Mary Placide	Mother MacAuley High School Chicago, Illinois
Letitia Saunders	Guilford High School Rockford, Illinois
Evelyn D. Smith	Waukegan High School Waukegan, Illinois
Richard Tryba	Austin High School Chicago, Illinois
Elmer Waldschmidt	Adlai E. Stevenson High School Prairie View, Illinois
William Wilson	Wheaton High School Wheaton, Illinois

The Director, Associate Director, and the fifteen members of the seminar were on the campus of Northern Illinois University for eight weeks during the summer of 1965. The seminar convened for three hours daily, five days a week. Basic texts were

Bloomfield, Leonard. Language. New York: Holt, Rinehart and Winston, 1965. Chapters 1, 5, 10, 11, 12, and 16 were discussed in detail.
Francis, W. Nelson. The Structure of American English. New York: The Ronald Press Company, 1958. This work was the basic text in the seminar.
Sapir, Edward. Language, A Harvest Book. Especially intensive study was made of chapters 1, 4, 5, 6, 10, 11.

Each participant had his personal copy of the three basic texts. Available in the Curriculum Center library were these helpful books, which were invaluable in the development of the phonology units:

Kurath, Hans. A Phonology and Prosody of Modern English. Ann Arbor: University of Michigan Press, 1964.
Thomas, Charles Kenneth. An Introduction to the Phonetics of American English. Second edition. New York: The Ronald Press Company, 1958.

All of the books listed in the bibliography (p.) were on reserve in the Curriculum Center library, and were used as reference materials.

During the eight-week summer session of 1965, participants and directors met daily from 9:00 a.m. until 12:00 noon in formal seminar sessions. Using the above-mentioned texts, they studied the phonology and morphology of American English. Informal afternoon sessions were devoted to three activities: (1) Participants were divided into groups of three. Each group studied several high school grammar textbooks, using the following criteria:

Criteria for Grammar Textbook Evaluation

I. General introduction
A. Philosophy and approach
B. Level of student preparedness
C. Purpose

II. Type of Grammar (tradition, structural, transformational, mixed)
A. Definitions and basis for definitions
1. Semantic
2. Functional
3. Emotional intensity
4. Formal
5. Positional
6. Phonemic
B. Methods
1. Degree of induction and deduction
2. Analytic or synthetic
C. Grammar and Usage
1. Content
2. Definitions
3. Functions
III. Adaptability
A. Complexity
1. Repetition
2. Scope
3. Depth
B. Vocabulary
1. Extent
2. Type
C. Index
D. Glossary
1. Extent
2. Difficulty
IV. Integration
A. With literature
B. With composition and rhetoric
V. Exercises
A. Number
B. Type
C. Diagramming

The first week was devoted to these analyses. All members of the seminar felt strongly that they would be in a good position to develop helpful materials after they had become thoroughly familiar with materials already available for use at the high school level. All analyses and critiques were reproduced and distributed to directors and participants. The following excerpts are taken from the conclusions of sample critiques:

> Ellen Smith and Leona McAnulty. Essentials in English, Fourth Book. Wichita, Kansas: McCormick-Mathers Publishing Co., 1962.

"...This text is comprehensive in its scope. The 'essentials' of the title include grammar, usage, vocabulary, composition, and oral work. Only three or four exercises of the ten in each "block" are concerned with grammar and usage; only one of ten considers punctuation and capitalization.... The simplicity of the materials would indicate that the student to whom the workbook is addressed has previously learned little.... Grammatical terms are traditional. Because usage seems to be a dominant concern, grammatical aspects dealing with usage are presented comprehensively. The exercises are primarily recognition or selection types, the only exceptions being those concerning spelling of plurals and possessives....

Somehow, this text gives the impression of being a sort of pastry press: One pours in the formulas and squeezes out the correct forms.... The prescriptive force is so strong here, and the grammatical principles explained so peremptorily that the text might almost be considered a rule and exercise book...."

> Neil Postman, Harold Morine, Greta Morine. Discovering Your Language. New York: Holt, Rinehart, and Winston, 1963.

"...As an inductive text, the book is only partly successful. The title and introduction imply that the discovery technique is used throughout the book. However, the last exercise in Chapter 9 is the only example of the purely inductive method in this chapter. The first use of inductive technique in the chapter, discovering what function words are, is preceded by a general definition that gives away much of what is supposed to be discovered, and only one fill-in exercise is followed by questions that would lead the student to consider new concepts arising out of the exercises. The remaining exercises are run-of-the-mill analyses of already prepared sentences to identify what earlier texts describe as 'the parts of speech.' Perhaps this combination of the deductive with the inductive is best. Perhaps it is necessary in order to prevent the student from becoming bogged down. Perhaps he needs the deductive generalizations as a catalyst to help him organize into concepts the puzzling ideas arising out of inductive questioning. Certainly this problem is one which should concern us this summer."

John E. Warriner, Francis Griffith. English Grammar and Composition, Complete Course. New York: Harcourt, Brace and World, 1965.

"...The authors define a verb as 'a word that expresses action or otherwise helps to make a statement.' This definition indicates the authors' traditional approach to the identification of the parts of speech. The definition fails to say anything about the position of the verb, its relationship to the actor (except as implied in 'expresses action'), or its ability to fulfill the same role as other words of its class. Further, this definition says nothing about the verb's role in asking questions or giving commands. No precaution is taken to prevent confusion with verbals....

This text is an attempt to meet all the needs of both students and teachers for a reference text in English grammar and composition. This fact is partially indicated by the growth of the book from 692 pages in the 1957 edition to 787 pages in the 1965 edition. Teachers of traditional grammar favor the book for its organization, its convenience of use, and its wide variety of topics. However, as this review shows, the book does not include any new grammars, and topics are not treated in sufficient depth."

(2) The second activity of the informal afternoon seminars was the discussion of the syllabus of the morning's formal seminar session. Questions were raised and problems solved. Either the director or the associate director participated in these sessions. (3) Finally, time was devoted to the preparation of materials based on the work of the formal morning seminar. Toward the end of the summer session, much of the time in the afternoon group discussion was related to the development of materials for use in eleventh and twelfth grade classrooms.

By the end of the summer session, approximately three hundred pages of materials in phonology, morphology, and history of the language had been developed and duplicated. These materials were used experimentally in the high school classrooms of the fifteen participants; as a result, the materials were revised and expanded. New materials were written. During the winter of 1965-66, the Director and Associate Director of the Curriculum Center visited the classrooms of each of the participants, observing the use of the materials, and suggesting alterations and expansions. Frequently, the Director and his associate taught units in the classrooms they were visiting.

During the academic year of 1965-66, the seminar convened in Reavis Hall on the campus of Northern Illinois University on the following dates: October 9, 1965, November 13, 1965, December 11, 1965, January 8, 1966, February 12, 1966, March 12, 1966, April 16, 1966, and May 14, 1966. During these three-hour sessions, participants and directors exchanged views concerning the materials which were being used in the classroom. Revisions were suggested, new techniques were described, audio-visual materials were demonstrated and explained, and new units were developed.

On June 14, 1966, the Seminar re-convened on campus for the eight-week summer session. As in the summer of 1965, the seminar met for three hours in the morning in formal session; afternoons were devoted to discussions and development of materials. In the first week, the participants, together with the Director and his associate, revised and organised the materials which had been developed during the summer of 1965 and used experimentally in the high school classroom. The three groups, Phonology, Morphology, and History of the Language, were mimeographed and copies were distributed to each of the participants and to the English Institute Materials Center of the Modern Language Association.

Classroom time was devoted to the detailed study of transformational grammar. These five books were the basic texts:

Owen Thomas. *Transformational Grammar and the Teacher of English*. New York: Holt, Rinehart and Winston, 1965.

Noam Chomsky. *Syntactic Structures*. The Hague: Mouton & Co., 1957.

Robert B. Lees. *The Grammar of English Nominalizations*. Bloomington: International Journal of American Linguistics, Vol. XXVI, No. 3 (July 1960), Part II.

The other two basic texts were written especially for the project by the Director, Andrew MacLeish:

Phrase Structure Rules, a thirty-three page manuscript which was dittoed and given to participants.

The Transformations of English, a forty-three page manuscript which was dittoed and given to participants.

These two grammars were based upon a transformational analysis of five-thousand sentences from 12th grade student themes. The phrase structure grammar provided an introduction to the co-occurrent definition of parts of speech and the generation of kernel sentences. The transformational grammar was an informal statement of the most frequent kinds of transformations found in the writing of 12th grade students.

The curriculum center library contained other transformational texts which were available for reference. These are listed in the bibliography.

In the last week of the summer session, initial teaching units in transformational grammar were devised and distributed to members of the seminar. The units, which varied in length from one day to two weeks, included work in the method of transformational grammar, the phrase structure rules (with explanations for students), selected lesson plans in transformations, and a suggested method for using the new grammar in correcting student writing problems.

Procedure for the winter of 1966-67 was much the same as that for the preceding winter. Participants worked with the revised materials in phonology, morphology, and history of the language, teaching the materials and further refining them. Several corrections were made as a result of this work. In addition, the newly developed materials in transformational grammar were used in the classroom, and were revised and expanded. By the time the units from the summer of 1965 had been perfected, there was inadequate time for thorough experimentation with all of the transformational materials. Consequently, some of the units were not used, though additional units were developed.

The project directors visited each of the participants, as in the winter of 1965-66, and observed the use of the materials in the high school classroom. And, as in the winter of 1965-66, the seminar convened on campus on selected Saturdays to discuss the experimentation with the materials. Dates of the meetings were September 24, 1966, November 12, 1966, January 14, 1967, March 11, 1967, April 15, 1967, and May 13, 1967. At the April meeting, the seminar was divided into four groups to organize the transformational materials into four teaching units. In May the seminar met in an all-day session, at the end of which rough drafts of the four units were developed. The units are An Introduction to Transformational Grammar, Phrase Structure Rules, Transformations, and Using Transformational Grammar in Teaching Writing.

Included with the materials developed during the two summers were several visual devices and aids.

The summer of 1967, the third of the Curriculum Center, was devoted to the expanding, revising, and duplicating of the four units in transformational grammar, and to the preparation of the Final Report. The funding of the Center ends on August 31, 1967.

Instruments for Determination and Evaluation of Results

The principal method of determining and evaluating the results of the experimentation of the curriculum center was the participation and observation of the director and his associate. Both were teaching the materials in their own grammar classes at Northern Illinois University; both observed the fifteen participants using the materials in the high school classroom. In addition, the two directors discussed the materials and methods at the monthly meetings on campus, and made copious notes of the reactions of participants.

To obtain a structured evaluation from participants and from their department heads, principals, and colleagues, two questionnaires were devised by the directors and the participants. The first, sent to principals and department heads, contained the following:

Project English Questionnaire

To Department Head, Principal, Colleague

During the past two school years, a member of your English Department, working under a federal research grant to Northern Illinois University, has been experimenting with some different approaches to the teaching of English. The new linguistic materials which have been developed by the Northern Illinois University Curriculum Center have been incorporated into the curricula of your English Department, and have been taught by a member of your department.

We appreciate very much your cooperation in this experimental program. As it nears completion, we are collecting data which will enable us to evaluate our experiments. You have observed, and perhaps participated, in the program. We invite you, therefore, to comment upon the following questions as fully as you wish.

1. Do you feel that this experimental work has enhanced the total school program in any way?
2. Have you observed any reactions to the program, favorable or unfavorable, on the part of the students? This observation need not be limited to students participating in the project.

3. Have you observed any interest in the experimentation, either favorable or unfavorable, on the part of other teachers in your building?

4. Have you observed any changes in the attitude, work, or accomplishments of the participating teacher during this project?

5. Has your attitude toward linguistics as an approach to the teaching of English undergone any changes as a result of having this project carried on in your school? In what way has your attitude changed?

6. Do you think the introduction of linguistics in your English program has resolved any problem?

7. Has the use of linguistic materials developed by the N.I.U. Curriculum Center affected your curricula and selection of your texts in English?

8. As a result of the use of linguistic materials from the N.I.U. Center in your English Department, did your school participate in any in-service programs, institutes, linguistic seminars, workshops, or other released-time or extra-curricular activities?

The second questionnaire suggested an organization for the final report which each participant was required to submit to the directors by June 15, 1967. The following items were included:

1. Which units did you use?
2. How much time did you spend with each unit?
3. How did you work the unit into your curriculum?
4. What was student reaction to the units?
5. What was the reaction of staff and administration to the units?
6. What types of testing did you use?
7. What was the relationship of each unit to composition? Which materials helped the most with writing?
8. Which seemed to you to be the most successful (and least successful) portion of the material, and why?
9. Which materials do you plan to include as a permanent part of your 11-12 grade curricula?
10. Explain any in-service programs which you developed, motivated, or participated in.

The final evaluative instrument developed by the Curriculum Center was a test to determine the student's knowledge of phonology, morphology, and syntax; in addition, it was designed to test his sensitivity to linguistics. The test, called Form and Function, was used in two forms, A and B.

A TEST TO DETERMINE THE STUDENT'S KNOWLEDGE OF PHONOLOGY, MORPHOLOGY AND SYNTAX

FORM AND FUNCTION — DIRECTIONS

Form A

A person who has grown up speaking and writing English has a great understanding of the forms (spoken or written shapes) his language uses. He understands what roles these forms can play—what functions they can perform in a word, in a phrase, or in a sentence. From form, function, word order, and sound pattern, he can understand relationships between words and word parts.

This is a short test covering such understandings. You can do well on this test without "knowing grammar" in the school sense, but some of your past training may help.

Each question will ask you to compare three items in a particular way. In each question, you must try to find one which is different from the other two in the way stated for that question. For instance:

Example 1. Is one of the underlined parts different in sound?

A. off
B. for
C. of
D. All are alike

Since the sounds in the underlined part of off and in for are very much alike yet different from the sound of of, answer C is "different" and should be marked on the answer sheet.

Example 2. Does one of the pairs of underlined parts show a different change in function?

A. A short intermission can seem very short.
B. A thorough examination can become very thorough.
C. A cold shower can seem very cold.
D. All are alike.

In the first occurrence, short, thorough, and cold perform the same function. Again, in the second occurrence, short, thorough, and cold perform the same function. Accordingly, none is "different" and you should mark answer D, "all are alike."

MARK YOUR ANSWERS ON THE SEPARATE ANSWER SHEET.

Note to the teacher: Answers are provided for the benefit of the teacher.

FORM AND FUNCTION TEST, Form A

1. Is one of the underlined parts different in sound?
A. Thick
B. brother
C. there
D. All are alike
2. Is one underlined part different in sound?
A. scene
B. mice
C. aisle
D. All are alike.
3. Is one underlined part different in sound?
A. useful
B. uncertain
C. university
D. All are alike.
4. Is one underlined part different in sound?
A. care
B. wear
C. fair
D. All are alike.
5. Is one underlined part different in sound?
A. Church's
B. Tragg's
C. Lind's
D. All are alike.
6. Is one underlined part different in sound?
A. psychology
B. friction
C. scene
D. All are alike.
7. Is one of the underlined parts different in sound?
A. badge
B. huge
C. jury
D. All are alike
8. Is one underlined part different in sound?
A. Ralph's
B. Curt's
C. Donald's
D. All are alike.
9. Is one underlined part different in sound?
A. ditch
B. which
C. pitch
D. All are alike.

10. Does one word have a different number of sounds?
A. wind
B. light
C. known
D. All are alike.

11. Does one word have a different number of vowel sounds?
A. tame
B. steam
C. I'm
D. All are alike.

12. Does one pair show a different change in sound?
A. the ratchet was ratcheted
B. the record was recorded
C. the pyramid was pyramided
D. All are alike.

13. Does one pair show no change in sound in the underlined parts?
A. consume and consumption
B. corrupt and corruption
C. deduce and deduction
D. All are alike.

14. Does one pair show a different change in sound?
A. reserve and reservation
B. indent and indentation
C condemn and condemnation
D. All are alike.

15. Does one pair show a different change in accent, or stress?
A. a white board and a blackboard
B. a new song and a folk song
C. a tall school and a high school
D. All are alike.

16. Is one sentence still unclear even with a comma added?
A. What are we having for lunch, students?
B. Students, will the train schedules change?
C. Do you think it will rain, students?
D. All are alike.

17. Can one of these sentences be punctuated in two ways?
A. The first person who enters the room will be chairman.
B. My aunt who teaches school has a good sense of humor.
C. My father, who stands all day at work, likes to stretch out at home.
D. All are alike.

18. Does one of these word groups show a different kind of relationship?
A. seldom enforced law
B. steel supported structure
C. vitamin enriched milk
D. All are alike.

19. Does one of these word groups show a different kind of relationship?
A. pretty girl
B. city girl
C. catty girl
D. All are alike.

20. Does one of these word groups show a different kind of relationship?
A. friendly dogs
B. noisy dogs
C. many dogs
D. All are alike.

21. Does one of these word groups show a different kind of relationship?
A. dark green coat
B. Square blue scarf
C. bright red apple
D. All are alike.

22. Does one of these word groups show a different kind of relationship?
A. silver miner
B. silver platter
C. silver pitcher
D. All are alike.

23. Is one of the underlined parts different in function?
A. The man of the hour waved happily
B. The girl in the middle smiled brightly.
C. The officer about six o'clock returned briefly.
D. All are alike.

24. Is one of the underlined parts different in function?
A. My pen was out of ink.
B. My pen scratched at every stroke.
C. My pen fell onto the floor.
D. All are alike.

25. Is one of the underlined parts different in function?
A. specific house
B. cautious cat
C. marble statue
D. All are alike.

26. Is one of the underlined parts different in function?
A. The fire, fanned by the wind, blazed wildly.
B. The golfers, caught by the storm, were soaked.
C. The driver, shaken by the experience, seemed unable to talk.
D. All are alike.

27. Is one of the underlined parts different in function?
A. The very thought is upsetting.
B. It is very likely to rain.
C. He is a very friendly man.
D. All are alike.

28. Is one of the underlined parts different in function?
A. the prettiest girl
B. the most intelligent answer
C. the oddest picture
D. All are alike.

29. Is one of the underlined parts different in function?
A. In the corner will be too dark.
B. The worst is over.
C. Surf boarding is fun.
D. All are alike.

30. Is one of the underlined parts different in function?
A. Writing too hastily, the student can make mistakes.
B. Writing too hastily can cause the student to make mistakes.
C. A student writing too hastily can make mistakes.
D. All are alike.

31. Is one of the underlined parts different in function?
A. smaller
B. maker
C. farmer
D. All are alike.

32. Is one of these words different in formation?
A. dental
B. rental
C. mental
D. All are alike.

33. Is one of the underlined parts different in meaning?
A. children
B. books
C. taxes
D. All are alike.

34. Is one of the underlined parts different in meaning?
A. actress
B. mattress
C. address
D. All are alike.

35. Is one of the sentences quite different in meaning?
A. quickly the car stopped.
B. The car stopped quickly.
C. The car quickly stopped.
D. All are alike.

36. Is one of the sentences quite different in meaning?
A. Sam brought one sandwich only.
B. Only Sam brought one sandwich.
C. Sam brought only one sandwich.
D. All are alike.

38. Is one of the underlined parts different in function?
    A. elevate
    B. modernize
    C. facility
    D. All are alike.
39. Does one of these phrases have only one meaning?
    A. teacher test
    B. salad bowl
    C. model picnic
    D. All have two meanings.
40. Does one of these headlines have only one meaning?
    A. Watch falls from window.
    B. Check bounces quickly.
    C. Sing songs loudly.
    D. All have two meanings.

FORM AND FUNCTION, Form B
(Directions: Same as Form A)

1. Is one underlined part different in sound?
    A. father
    B. thin
    C. then
    D. All are alike.
2. Is one underlined part different in sound?
    A. scent
    B. rose
    C. island
    D. All are alike.
3. Is one underlined part different in sound?
    A. under
    B. united
    C. usable
    D. All are alike.
4. Is one underlined part different in sound?
    A. bear
    B. stare
    C. affair
    D. All are alike.
5. Is one underlined part different in sound?
    A. Beach's
    B. Ward's
    C. Cobb's
    D. All are alike.
6. Is one underlined part different in sound?
    A. character
    B. Scent
    C. action
    D. All are alike.

7. Is one underlined part different in sound?
A. ledge
B. age
C. Joy
D. All are alike.
8. Is one underlined part different in sound?
A. Robert's
B. Phillip's
C. Richard's
D. All are alike.
9. Is one underlined part different in sound?
A. witch
B. rich
C. stitch
D. All are alike.
10. Does one word have a different number of sounds?
A. mind
B. boat
C. doubt
D. All are alike.
11. Does one word have a different number of vowel sounds?
A. grain
B. mine
C. case
D. All are alike.
12. Does one pair show a different change in sound?
A. The rebels had rebelled.
B. The tangles had tangled.
C. The models had modeled.
D. All are alike.
13. Does one pair show no change in sound?
A. assume and assumption
B. interrupt and interruption
C. reduce and reduction
D. All are alike.
14. Does one pair show a different change in sound?
A. resign and resignation
B. conserve and conservation
C. expect and expectation
D. All are alike.
15. Does one pair show a different change in accent, or stress?
A. a narrow strip and a drag strip
B. a rough board and a skateboard
C. a gray house and a greenhouse
D. All are alike.
16. Is one sentence still unclear even with a comma added?
A. Will the weather change, students?
B. Students, will love birds sing?
C. What can I use for mopping the floor, students?
D. All are alike.

17. Can one of these sentences be punctuated in two ways?
A. The next person who opens a window will be pushed out.
B. My uncle who lives in Denver is coming to see us.
C. My mother, who likes surprises, will be pleased with this.
D. All are alike.

18. Does one of these word groups show a different kind of relationship.
A. well educated man
B. state supported school
C. student organised club
D. All are alike.

19. Does one of these word groups show a different kind of relationship?
A. hungry boy
B. country boy
C. angry boy
D. All are alike.

20. Does one of these word groups show a different kind of relationship?
A. modern people
B. quiet people
C. some people
D. All are alike.

21. Does one of these word groups show a different kind of relationship?
A. pale yellow dress
B. round red apple
C. bright orange flower
D. All are alike.

22. Does one of these word groups show a different kind of relationship?
A. glass blower
B. glass slipper
C. glass stopper
D. All are alike.

23. Is one of the underlined parts different in function?
A. The man with the mustache was staring rudely.
B. The two on the other end were laughing merrily.
C. The fountain at eight o'clock was splashing noisily.
D. All are alike.

24. Is one of the underlined parts different in function?
A. My car was out of gas.
B. My car ran into a tree.
C. My car rattled at every bump.
D. All are alike.

25. Is one of the underlined parts different in function?
A. wooden shoes
B. stylish dress
C. leather belt
D. All are alike.

26. Is one of the underlined parts different in function?
    A. Spinning too quickly, the man soon became dizzy.
    B. A man spinning too quickly can soon become dizzy.
    C. Spinning too quickly can soon make a man dizzy.
27. Is one of the underlined parts different in function?
    A. The very idea excites me.
    B. Your answer seems very unusual.
    C. Your very specific reason is a good one.
    D. All are alike.
28. Is one of the underlined parts different in function?
    A. By yourself would be dangerous.
    B. The best is coming.
    C. Ice skating is fun.
    D. All are alike.
29. Is one of the underlined parts different in function?
    A. the most peaceful solution
    B. the easiest way
    C. the nearest way
    D. All are alike.
30. Is one of the underlined parts different in function?
    A. The rain, driven by the wind, was frightening.
    B. The river, confined by the cliffs, was rapid.
    C. The kite, held by the string, flapped madly.
    D. All are alike.
31. Is one of the underlined parts different in function?
    A. smallest
    B. longest
    C. detest
    D. All are alike.
32. Is one of these words different in formation?
    A. probably
    B. washable
    C. workable
    D. All are alike.
33. Is one of the underlined parts different in meaning?
    A. oxen
    B. papers.
    C. boxes
    D. All are alike.
34. Is one of the underlined parts different in meaning?
    A. actress
    B. fortress
    C. lioness
    D. All are alike.
35. Is one of the following sentences quite different in meaning?
    A. Slowly the boat started.
    B. The boat started slowly.
    C. The boat slowly started.
    D. All are alike.

36. Is one of the following sentences quite different in meaning?
A. Charley said one word only.
B. Only Charley said one word.
C. Charley said only one word.
D. All are alike.
37. Is one of the underlined parts different in function?
A. pleasantly
B. lonely
C. gentlemanly
D. All are alike.
38. Is one of the underlined parts different in function?
A. eliminate
B. vandalize
C. Simplicity
D. All are alike.
39. Does one of these phrases have only one meaning?
A. summer vacation
B. record sale
C. monster rally
D. All have more than one meaning.
40. Does one of these headlines have only one meaning?
A. Face wrinkles with disgust
B. Plan moves ahead.
C. Ignore books in summer.
D. All have more than one meaning.

RESULTS

1. Summary of Materials

The first group, Phonology, consists of 160 pages and two parts. Part I includes a short overview to aid the teacher in his own mastery of phonemics, and day-by-day lesson plans for a fifteen-day unit. Also provided is additional resource material for possible extension beyond the fifteen days. A brief explanation suggests possible ways of adapting the unit to junior or senior English courses of study. Alternate lesson plans, exercises, tests, an annotated bibliography, a glossary, and suggested visual aids are included. Part II, Suprasegmental Phonemes, is a more comprehensive treatment of the suprasegmentals of English than that of Part I. Included in the six-day unit are detailed day-by-day lesson plans, exercises, and tests. There is an essay, "Using Audio Aids in Teaching Intonation," which is helpful to teachers who wish additional material to include in a larger unit on literature or creative writing. Part II can be used by itself, or can be incorporated into the fifteen-day phonology material.

The second group, Morphology, consists of 113 pages and two parts. The first part is planned to complement the grammar which high school students already know, and generally to enrich the understanding they have of their language; this survey of the parts of speech is not divided into daily lesson plans, but it designed to be adapted as the individual teaching situation requires. The second part is composed of the following teaching materials: An introductory unit to morphemics, a unit on morphemics and vocabulary study, a unit on derivational suffixes, a unit on using the parts of speech in teaching formal definition. The morphology materials can be used preceding or following a unit on syntax, after a unit on phonology, in an honors senior English class, or as enrichment for superior students.

The third group of materials, History of the Language, is composed of four parts and 112 pages. Included with each of the parts are objectives, an explanatory note to the teacher, a list of teaching situations to which the part can be adapted, comprehensive daily lesson plans, descriptions of audio-visual materials, and an annotated bibliography. The four parts are these: The History of the Sounds of English (four-day unit), The Development of the Grammatical Signals of Modern English (ten-day unit), The Historical Development of English Spelling (five-day unit), and Etymology (ten-day unit).

The fourth group of materials, Transformational Grammar for High School, contains four parts and five appendices, a total of 181 pages. Part I, An Introduction to Transformational Grammar, defines and illustrates the approach, and compares it with traditional grammar. Part II presents the Phrase Structure rules, with teaching suggestions. The third part describes and illustrates certain double-base and single-base transformations. Part IV, Transformational Grammar and Writing, is a suggested approach for the use of transformational grammar in the analysis of student writing errors. The section is not designed as a teaching unit, though it could be adapted for classroom use as a logical conclusion to the lessons in the first three parts of the transformational group. The units in this group can be incorporated into various parts of the senior high school English curricula. For example, Parts I and II can be used as a supplement to a unit in traditional or structural grammar, or a unit on diagramming; the first three parts can follow units in phonology and morphology, or they can be used as an introduction to a unit in composition.

The 566 pages of materials produced by the Curriculum Center can be used to plan a useful year's work. Or they can be effective supplements to the high school language arts curriculum. The high school teacher of English, by using these materials, can build a new comprehensive syllabus, or he can incorporate into the body of his old syllabus as little or as much of the new grammar as he chooses.

2. Use of the materials

The following discussion is based upon observations of the directors, two written reports from each participating teacher, and a questionnaire sent to the principal and/or department head in each participating school.

The Phonology materials were used in the following contexts: before and during a unit on the history of the English language, before a unit on punctuation, before and during a unit on sentence structure, before and during a unit on poetry, and before a unit on drama (Pygmalion). Morphology materials were most frequently used along with vocabulary building work, or after a unit on phonology. Both Phonology and Morphology materials were incorporated into a unit on Chaucer. The History of the Language materials were used in senior English as enrichment, or in conjunction with Beowulf and the Canterbury Tales. Transformational material was used in college-bound senior rhetoric as an adjunct to study of style, at the end of a unit of traditional grammar, and as enrichment. One teacher used the Morphology material in the customary senior English essay on definition; another used it in conjunction with a formal study of Aristotelian definition. One teacher incorporated the Transformational material into an entire semester's work in English literature. She used the first ten minutes of each class period to cover part of a transformational grammar unit.

The following chart indicates the classroom time spent on the materials each time they were used:

UNIT	MAX. CLASS DAYS	MIN. CLASS DAYS	AVERAGE
Phonology	20	10	12
Morphology	10	4	7
Hist. of Lang.	9	4	5
Trans. Gram.	18	10	13
Intro.	2	1	1
Phrase-Struct.	15	5	8
Transformations	9	2	3+

3. Summary of Reaction to Materials

Phonology: Three adverse criticisms recurred in the reports of the participants: The unit was too long to work into the context of an already full junior and senior syllabus; students felt that the material had little practical value;

some of the units were too simple for use by seniors, the consensus of the students being that the material on phonology should be taught at a much earlier grade level. Despite these unfavorable reactions, the general response of students and teachers to the phonology units was favorable; in fact, these materials were the most successful of those developed by the Curriculum Center. Indicative of their usefulness is the fact that fifty N.D.E.A. institutes used them in the summer of 1967. Four favorable comments by participants summarize the success of the units: They were used successfully in teaching spelling; in conjunction with conventional rules, they were used adjunctively in teaching punctuation; they were flexible enough to be worked into nearly any part of a syllabus; and most important, the materials, presenting an approach to language new to most students, were stimulating to both pupil and teacher.

Morphology: Three adverse criticisms appeared frequently: The materials repeated work accomplished earlier in language courses; they should be taught much earlier, because senior English isn't the place for parts of speech; and there is no practical application of the material. Most reactions were favorable, however: Students were led to use the dictionary and thesaurus, they were aided in spelling and vocabulary study, and they were helped to see grammar as a study which can be eclectic in nature (The traditional definitions of the parts of speech can be supplemented instead of replaced). Finally, the units were easily adapted to the syllabi of junior and senior English: Several of the participants used morphology materials during the first ten minutes of the class session, and thus spread the unit over an entire semester.

History of the Language: Only one adverse criticism recurred: The materials were too technical in nature; students found them too difficult. On the other hand, all students were excited about the units, some even working out units which were not assigned. Teachers found them easy to synthesize with other units in junior and senior English.

Transformational grammar: Unlike the other three sections of the material developed by the Curriculum Center, this section was used experimentally for only one year in the high school classroom. The material was not revised; some of it was extremely elliptical in nature. The summer of 1966 was devoted to the study of the transformational approach, and to the revision of the materials on phonology, morphology, and history of the language. Comments concerning the transformational materials, therefore, should be considered extremely tentative; if the project were to continue for another year, results would perhaps be different. Unfavorable reactions were these: The grammar should be started earlier in the student's educational career; the senior year is too late. Several students complained that the materials involved busy work; there was no practical result. Some students could not adapt to the symbolic nature of the approach. And teachers were dissatisfied with the materials: They were not as finished as they might have been, and the exercises were not adequate. Several teachers lamented the fact that they did not have more time to experiment. Despite these criticisms, however, the transformational materials were second only to the phonology units in the success with which they were used. Students liked the novelty of the approach; it was fun. Also, they appreciated the systematic, orderly rules of the grammar, and the appeal to intuition. Most participants found that transformational grammar, especially the transformations themselves, helped students to understand their language, and, in addition, to come to grips with their errors in sentence structure.

4. Relevance to writing:

A primary goal of the Curriculum Center was to explore the relevance of the new grammars to composition. Do the new approaches help students with their writing? Despite the work of Bateman and Zidonis, Kellogg Hunt, Verna Newsome, et al., the answer is elusive. Our participants felt that the work in morphology and phonology helped students with spelling, diction, and punctuation. "Before" and "After" themes indicated that students had improved. And the students themselves were convinced that their writing was better as a result of the work in the new grammars. Perhaps the most striking reactions occurred in response to the transformational materials. Students felt certain that their sentence structure was more complex, more sophisticated, because they had been made aware of the possibilities for varying different kinds of structures. The participants varied somewhat in their reactions to the new transformational material. Some felt that there are easier ways of correcting student errors than by use of transformational grammar; some reserved judgment because of inadequate experimentation. All agreed, however, that knowledge of transformational grammar is a sine qua non for the classroom teacher of English. Errors in sentence structure inevitably lie within the deep structure of or transformations on basic sentences. And the teacher who understands transformational grammar will understand the reason for his student's errors.

5. Adjunctive results:

The influence of the Northern Illinois University Curriculum Center was felt throughout northern Illinois and across the nation. The two directors acted as consultants for many high school English departments, spoke at numerous county institute meetings, and appeared at two meetings of the National Council of Teachers of English at the CCCC meeting in 1967, and before the Illinois Association of Teachers of English to describe the work of the Curriculum Center. Techniques of writing lessons and grammars and insights into linguistic structure were used by the Director in consultations from the District of Columbia to Hawaii. Materials from the Center were published by the Modern Language Association Materials Center, and, despite the relatively small size of the N.I.U. Center, the materials were extremely popular—third in demand. Hundreds of letters of inquiry were received by the N.I.U. Center.

Participants encouraged use of the materials among other teachers of English in their high schools; also involved in the use of materials were teachers of Latin, Spanish, and Speech. Participants talked informally to other members of their departments about the four units developed by the N.I.U. Center, and ten of the fifteen participants operated released-time in-service sessions for members of their departments. Faculty meetings were devoted to discussions of linguistics; curriculum directors were urged to consider revisions incorporating linguistics materials into the curricula of 11th and 12th grade language arts programs. Four participants spoke at county institutes; one participated in a linguistics institute at Northern Illinois University. Two articles describing materials developed at the Curriculum Center appeared in the English Journal.

Ten of the fifteen high schools represented in the N.I.U. Center have revised their English programs as a result of the work of the Center; all ten have adopted texts which utilize the newest discoveries in linguistics.

One participant has accepted a position teaching linguistics in a junior college; two have embarked upon work which will lead to the doctorate in linguistics; three have accepted positions as consulting editors in linguistics for a publisher of high school textbooks.

6. Summary of specific findings

Since its initial funding, the Northern Illinois University Curriculum Center has engaged in experimentation and instruction which have led to the development of 566 pages of materials in phonology, morphology, history of the language, and transformational grammar. Use of these materials by experienced teachers of English has resulted in the following specific findings:

a. The new grammars can be taught successfully at the senior high school level to students thoroughly indoctrinated in traditional grammar, and to those who know little of any grammar.

b. The new grammars can be taught by instructors whose formal training is traditional.

c. The new grammars can be incorporated in the syllabi of literature, traditional grammar, or composition courses.

d. The new grammars can be correlated with foreign language and speech.

e. The new grammars can make students more sensitive to their writing errors, as well as help them avoid certain of their errors.

f. The new grammars can show teachers explicit and unambiguous ways of helping students eliminate errors.

g. The new grammars can make students more sensitive to their language and its structure.

h. The new grammars can stimulate and motivate student and teacher to further study of their native language.

i. Most of the materials could be introduced earlier in the language arts curriculum.

DISCUSSION

The primary objective of the Northern Illinois University Curriculum Center was the development of teaching units in structural and transformational grammars. (Page 3 of Initial Proposal) These units were to be so constructed that the teacher untrained in the new grammars could use them readily; also, all materials were to be usable at the senior high school level, grades eleven and twelve, with students who had been previously trained in traditional classroom-conventional grammar. The materials were to be sequential, offering a comprehensive study of the new grammars, or they were to be capable of incorporation as enrichment, as aid to composition, as supplements. In the initial proposal, the director stated his intention to develop a phonology and morphology for senior high school, and to follow these with a detailed study of an immediate constituent grammar, already complete by the director. Then the transformational grammar materials would be developed. These materials (the immediate constituent grammar and the transformational grammars) "...will show the close relationship between IC grammar and the first steps of generative grammar...."

Much of the summer of 1965 was devoted to a study of phonology and morphology. At the end of this period the seminar examined immediate constituent grammar in preparation for the following summer's work in transformational grammar. Research had indicated clearly that there was a great need at the senior high school level for materials in the history of the English language. Accordingly, the decision was made to omit detailed study of structural syntax and to include development of materials in the history of the English language. The units which were developed during the summer of 1965 and the winter of 1966 were Phonology, Morphology, and History of the Language. The unit on transformational grammar was developed at the end of the summer of 1966. Total material produced by the Curriculum Center numbers more than 1000 pages. Selections, revisions, and deletions resulted in assembled units totalling 366 pages.

1. Phonology:

The purpose of the materials on English phonology is to lead the high school student to discover the systems underlying the language which he speaks and reads; the method used is the direct clinical examination of the sounds of the language.

Use of the material can improve a number of specific language skills. Showing the inadequacy of the English graphic system will help students understand problems in English spelling. Considering the factors of stress, pitch, and juncture in English will give insight into punctuation. Many common usage errors which result from phonemic problems (e.g., use to for used to) may be identified and corrected. Students who understand the sound system of English will reach a clearer understanding of grammatical relationships, and will improve their ability to read imaginative literature as well as expository prose.

Both teachers and students who have a common understanding of English phonological principles will be able to understand the causes of many errors in speech and writing. The phonological approach of this unit will give the student a specific basis for avoiding errors by eliminating the mystery which often exists in the student's mind concerning the teacher's corrections. For example, a phonemic rendering of "mischievous" in the margin is much more explicit in identifying the spelling error than a circle around the misspelling "mischievious" or the letters "sp" in the margin.

The phonology unit provides the high school teacher with a practical knowledge of the nature and functions of English sounds, and also gives him tested, suitable materials for teaching the sound system of English to his students. The unit begins with an overview of phonology for the teacher. Because the scarcity of materials and the specialized nature of published studies present many barriers for the average teacher, the annotated bibliography following the overview is divided into sources of information about the language itself (the theory), and sources which provide teaching aids for the classroom (the practice). Included also are two essays, "The Relation of Phonology Units to the English Curriculum," and "Meeting Some Unanticipated Situations and Attitudes."

The following excerpts are typical examples of the materials provided for the teacher in the "Teacher Overview" section of the phonology:

TEACHER OVERVIEW

A descriptive grammar of English involves a study of a system of speech sounds—PHONOLOGY, a study of words and their meaningful parts made up from the individual speech sounds—MORPHOLOGY, and a study of these word arrangements to form sentences—SYNTAX.

Study of English grammar should logically begin with a consideration of the speech sounds. Language is primarily oral and writing is an attempt to transfer sound to sight. Linguists have devised two visual systems: a system to represent significant sounds of speech—SEGMENTAL PHONEMES, and another system to indicate tones of voice—PITCH, emphasis—STRESS, and pauses—JUNCTURE.

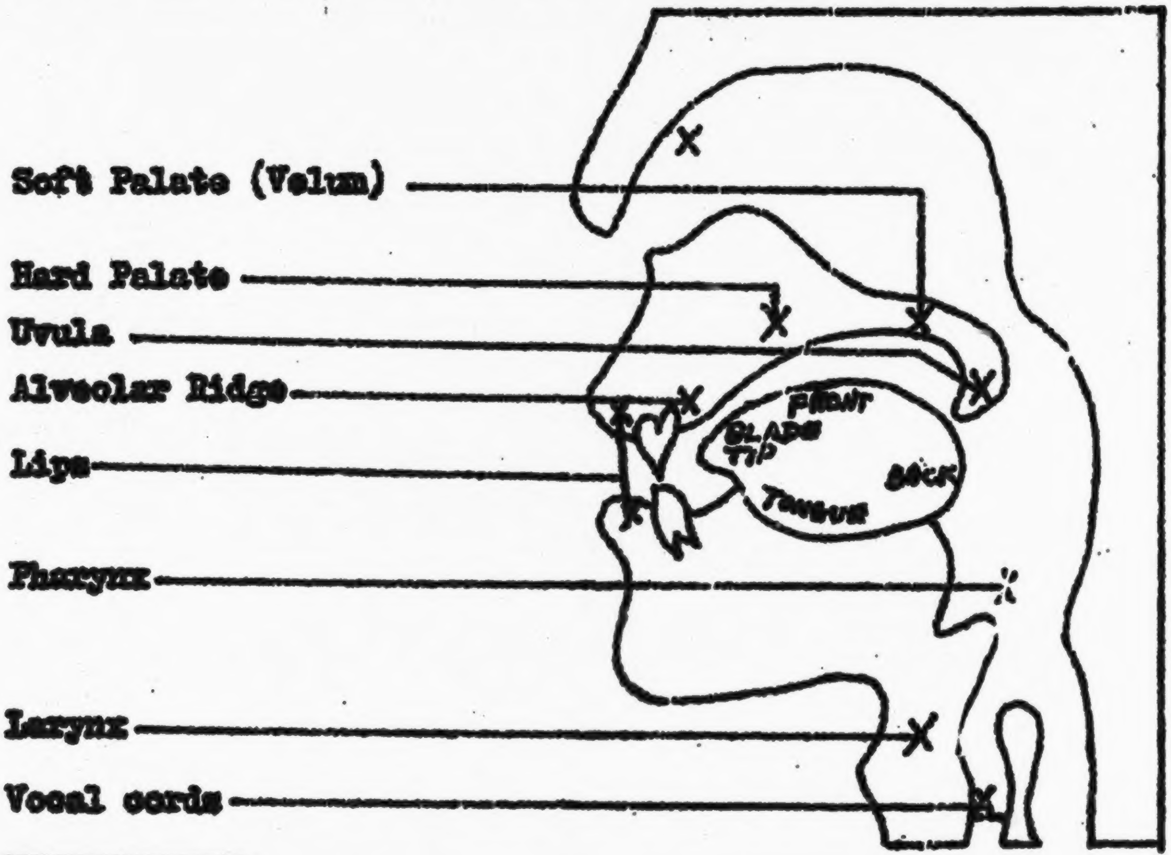
Speech sounds are sound waves created in a moving stream of air. Inside the larynx are two short bands of flesh and muscle stretched from front to back. The air which is expelled from the lungs passes between these vocal cords in the larynx and proceeds upward to one of the two possible outlets, the mouth or the nose. In producing speech sounds, the speaker either tenses or relaxes the vocal cords. If the vocal cords are tensed, they vibrate and the sound is called VOICED. If the vocal cords are relaxed, they do not vibrate and the sound is called VOICELESS.

The basic unit in the study of speech sounds is the PHONEME, a speech sound that signals a difference in meaning.

Dome and *tame* sound exactly the same except for the /d/* and the /t/, yet their meanings are different. Thus /d/ and /t/ are phonemes. Pairs of words which show a single phonemic contrast are called minimal pairs.

A phoneme can be pronounced in different ways and still remain the same phoneme. Such variants of a phoneme are called allophones. These allophones are represented with bracket enclosures whereas the phonemes are enclosed in slant marks. A phoneme is a class of similar significant sounds, not just an individual sound. If one pronounces *lit* and *toll* slowly and distinctly, one can hear two different *l*'s. The use of one or the other of these *l*'s never makes a difference in meaning, so they are not two phonemes but merely variants of the /l/ phoneme, allophones.

Segmental phonemes are broken into four divisions for the purpose of study: consonants, semi-vowels, vowels, and diphthongs. Below is a labelled diagram which may be helpful in examining the formation of these segmental phonemes.



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*The slant lines indicate a symbol representing sound, not a letter. The teacher should be aware that, when introducing the segmental phonemes, he should refer to them not as letters of the alphabet. For instance, /p/ is referred to by its explosive sound without a vowel sound following and not as the letter *p*.

A. Consonants - segmental phonemes

1. STOPS

All stops are formed by completely interrupting the breath stream of the speaker. Stops vary in that the air stream is stopped at different places or points of articulation.

—— stops /p/ and /b/

The bilabial stop /p/ is formed by pressing the two lips together; hence, the term bilabial stop. The /p/ stop is voiceless: the addition of voicing creates the second bilabial stop, /b/.

—— stops /t/ and /d/

The /t/ is formed by bringing the tongue tip against the gum ridge behind the upper teeth and holding the sides of the tongue firmly against the upper teeth. /d/ is formed in the same way, with the addition of voicing.

—— stops /k/ and /g/

In /k/ the sound is produced by pressing the back of the tongue against the soft palate behind the roof of the mouth. /g/ uses the same tongue-back, soft palate contact point to stop the passage of breath, but /g/ is voiced.

2. AFFRICATES /č/ and /ǰ/

The voiceless affricate /č/ is made by bringing the tongue tip to the gum ridge and immediately bringing it away somewhat more slowly than in the release of the stop. /ǰ/ is formed in the same manner with the addition of voicing.

3. FRICATIVES /f/ and /v/

Fricatives are produced by placing the lower lip lightly against the upper teeth. Friction is created as the breath is forced through. The sounds are distinguished by voicing: /f/ is voiceless while /v/ is voiced.

—— fricatives /θ/ and /ð/ (called theta and eth)

These sounds are created by the friction of the breath which is forced between the tip of the tongue and the upper front teeth. The /θ/ is voiceless. (thin, booth, ether, deathly) /ð/ is produced in the same way except that it is voiced. (the, either, there, bathe)

4. SIBILANTS /s/ and /z/

/s/ is voiceless while the /z/ is voiced. Both sounds are formed by the forcing of air through a groove in the top of the tongue. The tongue is against the ridge of the upper front teeth.

— sibilants /š/ and /ž/

The /š/ is voiceless and made just like the /s/ except that the groove is in the blade and front of the tongue and the airstream hits the upper gum ridge. The /ž/ requires the addition of voicing. (/š/ – sh as in shall, /ž/ –ge as in rouge or s as in treasure)

. . . .

C. VOWEL SOUNDS – (General) – segmental phonemes

Vowels differ from consonants in being produced by the relatively unobstructed passage of breath through the mouth. Thus they contrast with consonants which, as we have seen, are produced by some contact or construction of the speech organs, resulting in complete or partial stoppage of breath.

Vowels are distinguished from one another in several ways:

1. length
2. height of tongue
3. place of articulation
4. tension of tongue muscles
5. rounding of lips

1. HIGH VOWELS /i/ and /u/

The phoneme /i/ is a high, front, lax vowel, with the upper surface of the tongue less convex, and no muscular bulge under the chin. The decreased tension of the tongue is important.

The /u/ is a high, back, lax vowel. The tongue is retracted from the front position for /i/, and the lips are not fully rounded.

2. MIDDLE VOWELS /e/, /ə/, and /o/

The vowel phoneme /e/ is the mid-front lax vowel. The tongue muscles are relaxed, and no bulge can be felt under the chin.

The unstressed vowel /ə/ is a central lax vowel. As the sound is produced the tongue, jaw, and throat are relaxed. The sound is produced without apparent articulation above the throat. This sound could be described as a "gruntle": poke yourself in the stomach hard enough to produce an involuntary cry, and that sound should be /ə/ or close to it.

The /o/ vowel phoneme is produced with rounded lips, and it is described as a middle back vowel. Middle refers to the relative tongue height, and back indicates that the tongue is bunched in the rear of the mouth.

3. LOW VOWELS /æ/, /a/, and /ɔ/

To understand the low vowels, hold the finger horizontally under the jaw while the vowels /i/, /e/, and /æ/ are pronounced. The dropping of the jaw, registering the dropping of the tongue from high to low, can readily be felt.

The low front vowel /æ/ is produced with rounded lips and the tongue is relaxed in a low, frontal position.

The low central vowel /a/ is produced with the tongue-arch in the center of the mouth, midway between the front and back vowel positions.

The tongue is retracted and bunched at the back of the mouth to produce the low back vowel /ɔ/.

D. DIPHTHONGS – segmental phonemes

Diphthongs are composed of a simple vowel sound combined with a gliding movement of the tongue to an upward and forward position (fronting diphthongs) or to an upward and backward position (retracting diphthongs).

1. Fronting diphthongs /iy/ and /ey/

The /iy/ is made in two ways; the first is by gliding the tongue toward the /i/ position as in yes, the second is by gliding the tongue away from the /i/ position as in say.

The /ey/ is a mid-front tense diphthong. The tension of the tongue muscles can be felt in the bulge under the chin as for /iy/.

2. Fronting diphthongs /ay/ and /ɔy/

The low central vowel diphthong /ay/ and the low back /ɔy/ are created by the lengthening of the vowel followed by a gliding movement of the tongue toward the /i/ position.

3. Retracting diphthongs /aw/ and /uw/

The retracting diphthongs are formed with the tongue in the position of the beginning vowel /a/ or /u/. The tongue is retracted during the glide to the position of the high back vowel /u/.

. . . .

SUPRASEGMENTAL PHONEMES

Each phoneme is a meaningful component of the continuous flow of speech. The phonemes considered are called segmental phonemes. These phonemes are uttered with varying degrees of stress. The voiced phonemes are sounded on different pitch levels, and pauses are used to pattern the whole utterance into groupings. These three oral practices: STRESS, PITCH, and JUNCTURE are phonemic. Since they accompany or are superimposed on the segmental phonemes, they are called suprasegmental phonemes.

SUPRASEGMENTAL STRESS PHONEMES

Stress refers to a degree of prominence a syllable has. There may be as many degrees of stress as there are syllables; but since many of the differences will be slight, concentration here will be on those differences of stress that have the power to distinguish meanings -- the stress phoneme.

/ primary stress   \ mid stress   ˘ weak stress (usually not indicated)

In contrasting conflict (noun) with conflict (verb):

cónflìct n.   cònflíct v.

the words remain identical except for the positions of their primary and mid stress which signify the noun and the verb.

Concentration on word groups and sentences calls for all four degrees of stress:

/ primary   \ third

^ secondary   ˘ weak

'Remarkable' as a word has all three degrees of word stress, but when the word occurs in a phrase, its primary stress is demoted to second.

remárkable   remârkable invéntion

SHIFTING STRESS

Stress can shift. Many words have a primary stress on the last syllable when in isolation or positioned before weakly stressed syllables. Placed before a stressed syllable, the primary stress shifts to the front of the word.

overníght   ôvernìght guésts

Grammatical patterns are accompanied by regular stress patterns.

I. A compound noun usually has the / \ pattern.

máilmàn   rócking chàir

II. Modifier and noun pattern is signaled by ^ / .

dârk róom

III. Qualifier and adjective or adverb takes pattern ^ / .

quîte háppily

IV. Verb and noun-object pattern has a ^ / stress.

They are râcing hórses.

(This pattern sometimes contrasts with the compound noun stresses.)

V. Verb and adverbial grammatical pattern has a ^/ stress.

You must lôok óut.

(The compound noun derived from this pattern retains the / \ stress pattern.)

The lóokòut had a long vigil.

VI. Really pattern I. reversed. \ / as in RHÒDE ÍSLAND and other proper nouns.

Sometimes either pattern I. or VI. can be used as in

shórt stòry or shòrt stóry

(Paraphrase to clarify meaning:

An òld máid is really not an ôld máid.

A spinster is really not old.)

GRADATION: A change in vowel quality when stress is reduced to weak stress.

He's a jûst man. /hiyz ə ǰə̂st mæn/ (Note change in just)

Jŭst a minute. /ǰəst ə minit/

Áre you coming? /ár yuw kə miŋ/ (Note change in are and you)

Whén ăre you coming? /hwén ə̆r yə kə miŋ/

SUPRASEGMENTAL PITCH PHONEME

Most linguists recognize four phonemic levels of pitch in spoken English - phonemic levels because these levels indicate differences in meaning. There are fluctuations in pitch which do not affect meaning and which may be considered as allophones of the same pitch phoneme. Not all use the same pitch levels (the same four absolute pitch levels), but most use the same number of pitch distinctions. These levels are labeled from lowest to highest simply as 1, 2, 3, and 4. Pitch phoneme 2 is considered the characteristic middle pitch level of the individual American English speaker. In written transcription, small superscribed numbers are used to indicate pitch levels. For example:

2 3 1 2 3 1
Where are you going? I'm going to the grocery.

Some prefer to use lines to indicate these changes:

Where are you going? I'm going to the grocery.

When unusually strong emphasis is indicated, the voice may rise to pitch 4:

Get that snake out of here.

NOTE: INCLUDED IN THESE MATERIALS IS A UNIT ON MARKING SENTENCE CONTOURS WHICH THE TEACHER WILL FIND HELPFUL. See SUPPLEMENT A

SUPRASEGMENTAL JUNCTURE PHONEMES

Besides using stress and pitch, speech modulates its flow by means of junctures, which are breaks in the continuity of an utterance, sometimes accompanied by changes in pitch. There are four juncture phonemes: one internal or open and three terminals. The first of these junctures, called plus juncture /+/, can easily be recognized merely by listening to the differences in the divisions between the following pairs:

gray + train	that + school
great + rain	that's + cool

By means of internal open juncture we are able to make distinctions between homophonous pairs like the above examples.

The next juncture, the single bar /|/, is characterized by a slight pause between stretches of speech which constitute an utterance, without any change in pitch.

He saw all the students | who reported for class.

Double bar juncture /||/ consists of a pause accompanied by a slight rise in pitch. In writing, the juncture would be shown here by using commas.

This man || who comes here every day || always brings lunch.

This man, who comes here every day, always brings lunch.

Double-cross juncture /#/ may consist of a pause and pitch-drop with voice-fade between two closely-joined stretches of speech, sometimes represented in writing with a semicolon:

I miss my sister#I wish she were here.

I miss my sister; I wish she were here.

Its use marks the ends of sentences and some questions:

When will he arrive#

He will get here by early morning#

Other questions are normally marked in speech by the use of the double bar terminal juncture, a rise in pitch: "Are you coming over tonight"||.

. . . .

Following this section are a supplement containing more discussion of the suprasegmentals (with a method of drawing intonation contours) and the two essays "The Relation of Phonology Units to the English Curriculum" and "Meeting Some Unanticipated Situations and Attitudes." The following is excerpted from the second essay.

MEETING SOME UNANTICIPATED SITUATIONS AND ATTITUDES

The situations treated here represent unforeseen "problems" which have been observed when teaching the unit of phonology. The commentary which follows each situation is intended to provide suggestions and attitudes which have proved helpful.

1. Problem: One of the major problems of the teacher is the insecurity in teaching a unit which seems new and untried and for which few materials exist as yet.

Comment: The interested teacher will soon discover that the suggested approach to language study is logical and that he will be able to share with his students the excitement of language understanding. The teacher will also find that this approach will confirm, clarify, and codify much of his existing knowledge of his native language.

2. Problem: The teacher without speech training often feels uncertain.

Comment: He can find the speech correctionist a valuable resource person for phonological materials.

3. Problem: The misuse of spoken English by adults is a source of mockery by children.

Comment: Students at the high school level will recognize this problem as one which they can successfully handle, thus avoiding ridicule of their own speech. For students to gain an understanding and appreciation of various dialects is a desirable outcome in itself.

4. Problem: Teachers may be apprehensive regarding their ability to handle all of the unexpected questions.

Comment: The use of the inductive approach in teaching a phonological unit will naturally foster an attitude of cooperation between the class and the teacher in exploring language. Students are excited by the challenge of finding examples other than the samples already offered by the teacher in demonstration. Students can do research in library sources, thus becoming acquainted with aspects of linguistics that are broader than phonology.

5. Problem: Teacher presentation of materials tends to dominate the unit.

Comment: Students can learn much of the material through exercises which present corollary principles and information and which will give them practice at the same time.

6. Problem: Teachers exhibit reticence in trying the sounds of the language and practicing phonemes.

Comment: Curiosity leads to willingness to attempt sounds, especially if the teacher is willing to over-accentuate and to demonstrate freely and have the students practice imitations.

7. Problem: The differences in pronunciation between students and teacher and between students within the class or community lead to different phonemic transcriptions.

Comment: Because of the differences in speech, there will be variations in the hearing of sounds. Those different sounds should be carefully recorded as the student hears them, not as he thinks they should be heard. The emphasis is on the learning of the distinctions of sound. As the student learns the distinction of sounds and can hear them more and more acutely and accurately, he will learn to hear sounds rather than *see* them as he thinks they should be spelled. Both an interest in dialects and an awareness of spelling confusions will develop naturally from this interest in sound distinctions.

. . . .

The annotated bibliography concludes the introductory overview for the teacher. Comprehensive teaching materials follow, preceded by a summary of the fifteen-day teaching unit. This summary, together with selected exercises, explanations, and procedures, is included in the selections which follow. For the convenience of the teacher, answers are included with the exercise materials.

Since classroom situations and course outlines vary greatly, the materials for classroom use are presented as a package with separate divisions within the whole; the teacher may either use the whole or select parts. Suggestions are offered for suitable incorporation of these units within course outlines. The day-by-day plans reflect the experience of the fifteen teachers who have tried the materials presented, and have found them to be flexible, comprehensive, and thoroughly usable. The glossary of terms included is intended for both teacher and student. Terminology is kept simple. A section noting unforeseen situations and useful suggestions and attitudes for handling those situations is included, because comparatively few teachers have been trained to handle the study of phonology.

Sample Teaching Materials

DAY-BY-DAY LESSON PLANS: Summary of the Fifteen-Day Unit

1. *Class:* A demonstration of how to discover details of sound formation in the pronunciation of phonemes. The teacher can use his own name or other name to illustrate the possible positions of tongue and lips and oral cavity. Students can practice with the teacher.

Assign: Each student is to analyze the ways in which the vocal apparatus is used in the pronunciation of his own name.

2. *Class:* Students will demonstrate the sounding of their names, thereby accumulating as a class the consonant phonemes in English. As students do this, the teacher can introduce the terms: voiced—voiceless, oral—nasal, stop—continuant, and vowel—consonant. Special attention is given in the phonemic introduction to the three pairs: p—b, t—d, and k—g. A showing of the slides will illustrate the formation of these sounds visually. If slides are not available, blackboard

diagrams will suffice unless the teacher has a student-made poster-model of a sideview of the head with a movable tongue-piece and lip-piece.

3. Class: The students will present and discuss the formation of the sounds that they have discovered. As these are reported, the teacher will introduce the phonemic symbols. The teacher can introduce the term "minimal pairs" during this process. A showing of the slides will illustrate the various consonants and semivowels in a review for the class of what has been covered during the period. (This showing can provide a review at the beginning of the period the following day, if the teacher prefers.)

Assign: Worksheet I--to be completed by the student for the next day.

4. Class: A review of the consonant and semi-vowels either by recitation, demonstration, or the showing of slides. A discussion of Worksheet I. Introduction of the vowels /i/ and /e/. Practice with words which have these phonemes but different spellings-- i.e., head, said.

Assign: Worksheet II--The students will write the first phoneme only in the list of words. The teacher can demonstrate with the first five or ten.

5. Class: A review of Worksheet II to date. An introduction of the vowel chart, and the diphthongs. A showing of the vowel slides.

Assign: Worksheet II--The students are to finish the words on the first half of the worksheet.

6. Class: A review of the words on the first half of Worksheet II.

Assign: The students will finish the second half of Worksheet II. The students will write in phonemic transcription jokes for other students to read on the following day. Students should be instructed to bring their dictionaries to class.

7. Class: A review of the transcriptions of the rest of Worksheet II. Students exchange their jokes written in phonemics.

Assign: Worksheet III--The student is to use his own pronunciation; if the word is not known to the student, he should use the dictionary.

8. Class: A discussion of Worksheet III, noting the differences between spellings in English and the phonemic transcriptions. A practice session in phonemic transcription using words which have peculiar sounds. An introduction of the "so what" sessions—a discussion of the various peculiarities of the English language which a study of phonemics will clarify.

Assign: The reading of the chapter "How to Spell Ghoti" in Roberts' Understanding English if a classroom set is available. The emphasis is on the possible English spellings for each phoneme. If sets are not available, students can prepare reports on the materials for class presentation the following day. (These assignments could be made earlier.)

9.[1] Class: A continuation of the "so what" sessions. A discussion or reports on the range of spellings possible in English for the various phonemes.

10. Class: An introduction of the suprasegmental phonemes. See the worksheets with explanations.

11-13 Class: A continuation of the work on suprasegmental phonemes. The work of the previous day(s) can be reviewed and new materials in the sequence introduced and discussed.

14. Class: A review of the unit on phonology in preparation for the test on the following day.

15. Class: Test on the unit on phonology.

Phoneme Worksheet I   Consonant Phonemes

REMEMBER YOUR SLASH MARKS!

Which two consonant phonemes are never initial in English words?

/ŋ/ and /ž/

If an English word begins with three consonant phonemes in a cluster, there is a fixed order of these phonemes according to type of sound. Can you figure out what this order is?

1. only /s/

---

[1] The unit can be terminated after day nine if the teacher wishes.

2. voiceless stops /p/ /t/ /k/

3. /l/ /r/ /y/ /w/

What are the eight pairs of consonant phonemes which are similarly formed but which are differentiated by being voiced or voiceless? Give an original example word for each and underline the portion of the word which represents the phoneme.

1. a. /p/ ____________
   b. /b/ ____________
2. a. /t/ ____________
   b. /d/ ____________
3. a. /k/ ____________
   b. /g/ ____________
4. a. /f/ ____________
   b. /v/ ____________
5. a. /θ/ ____________
   b. /ð/ ____________
6. a. /s/ ____________
   b. /z/ ____________
7. a. /š/ ____________
   b. /ž/ ____________
8. a. /č/ ____________
   b. /ǰ/ ____________.

"SO-WHAT" Sessions

The "so-what" sessions are discussion sessions which follow the lessons which teach phonemic transcription. The emphasis throughout is on the importance of phonemic environment in English words, not on spelling by formal rules. Part of this discussion involves spelling; some involves parts of speech. With the help of examples as starters, a class can discover the relationships involved. The underlying reasons for spelling rules become obvious through these sessions. The following are examples which suggest some of the environmental areas that a teacher might wish to cover. The discussion can be conducted with the blackboard or the overhead projector.

"SO-WHAT" SESSION: 1

Voiced - voiceless pairs:

intent	intend
extent	extend
descent	descend
*****	
subscribe	subscription
describe	description

(Students who said they had formerly been forced to learn two spellings of this Latin root when they had had no Latin now felt the relationship was easy to see.)

bath	bathe
cloth	clothe

*****

grief	grieve
proof	prove
safe	save
leave	left
bereave	bereft

*****

loose	lose
house (n)	house (v)
use (n)	use (v)
close (adj.)	close (v)
advice	advise

*****

Silent letters which become sounded:

condemn	condemnation
autumn	autumnal
long	longer

Why does one often hear a /k/ in length? Why a K?

*****

Intrusive p

consume	consumption
resume	resumption
something	(Do you say "p"?)
warmth, etc.	

*****

in-	insecure
	illegal
	impossible
	irregular

*****

com-	commotion
	collaborate
	convention
	corroborate

*****

Doubling of final consonant

dined	dinned
hoped	hopped

*****

Pattern of pronunciation of -ed

/t/	/d/	/id/
rapped	sprayed	batted
asked	nabbed	gadded

*****

Pattern of pronunciation of -s and -es

/s/	/z/	/iz/
cats	cads	misses
laps	labs	dishes

*****

Combinations not used in English words

Vrtol
Pfund (family names in the area)

"SO-WHAT" SESSION: 2

WORKSHEET IV—Phonemics and spelling

I. Distinguish meanings
  A. Different parts of speech and phoneme: (Note voiceless and voiced phonemes. What pattern seems to appear?)
    grief—grieve (grievous)
    intent—intend
    loose—lose
    bath—bathe
  Other examples:
  B. Different parts of speech and phoneme, but same grapheme: (Does the same pattern appear here?)
    house—house (noun—verb)
    use—use (noun-verb)
  Other examples:
  C. Different part of verb: (Why does the phoneme need to change from voiced to voiceless?)
    leave—left
    bereave—bereft
  Other examples:
  D. Different senses but same phoneme:
    Whoever spies it first wins. (v)
    Where do the spies meet? (n)
    Which spy's satchel did you snatch? (n—poss.)
  Note homonyms:
    tax—tacks   tax us—taxes
    tacked—tact   Other examples:

. . . .

In addition to the fifteen-day unit, with exercises, explanations, and tests, the phonology material includes a wealth of supplementary exercises, lesson plans, and explanations. All of these items are optional; they can be ignored, or included in the regular lesson plans.

The first item is an exercise illustrating the importance of segmental phonemes in the artistry of poetry, using A.E. Housman's "When I Was One and Twenty." Second is an essay, "Using the Suprasegmental Phonemes to Aid the Slow Reader." Third are exercises illustrating the Great Vowel Shift and providing practice in marking stress and intonation contours.

Next are sections expanding the descriptions of the phonemes of English, and explaining some pitfalls in writing which can result from use of the phonemes. The following pages are taken from this last section.

Phonemes

/s/ (voiceless)
Distribution: initial—see; middle—assist; final—hats
Spelling: s-see; ss-pass; sc-scent; sch-schism; c-race; z-waltz; x-toxic; silent-aisle

/z/ (voiced)
Distribution: initial-zone; middle-dizzy; final-rose
Spelling: z-zest; zz-dizzy; ss-dissolve; x-xylophone; ex-exist

Distinguish /s/ and /z/ by placing the proper phoneme above the letter.

/s/ /z/
sip zip

Sue zoo advice advise seal zeal sink zinc

race raze raise rice rise Bruce bruise loose lose

house(n) house(v) close(adj) close(v)

SPELLING problems involving /s/ and /z/

Verb-Noun combinations

advice-advise; device-devise; choice-choose-chosen; ceiling-sealing (homophones); prophecy-prophesy

Confusion of -s, -c, -sc, -ss

accent, ascent, assent; council, counsel, consul; decent, descent, condescend; fascinate; possess; reminisce; scene; success, unnecessary

Homophones: cite, sight, site; canvas, canvass; seller, cellar; cent, scent, sent; symbol, cymbal; desert (v), dessert (n), desert (n)

Adjective-Verb combinations: loose, lose; close, close

Confusion of -s and -c

absence
presence
sense
suspense
census
supersede
precede
proceed
procedure
consensus
concede
recede
pretense
defense
process
conducive
offence
offense
offensive
license
music

Words spelled -xc or -cc /ks/

excellent
except
accept
accidentally
excusable
exhalation
excitable
accident
accede, accession
exercise
exhibit

Confusion of /s/ and /z/

amaze
anxiety
criticism
disease
dissolve
doesn't
emphasize
exercise
facility
fantasy
magazine
realize-realization-realism
recognize
reservoir
surprise
symbolise
treason
resonant
analysis-analyse
paralysis-paralyse

Note: words ending in -ce are pronounced /s/, as noticeable, peaceable

Exercise: Test your ability to distinguish /s/ from /z/ by placing the following words in the appropriate columns labeled /s/ and /z/.

advice advise design choose lost loose resonate muscles circus zenith machine visualise thousand reception absence message miserable possess heroes essential treason pizza absolve close(adj) close(v)

USES OF THE LETTER -S

-s is used to form three (3) of the seven (7) English inflectional suffixes.

History: There were 307 inflectional suffixes in 905 AD—Anglo Saxon or Old English.

Inflection: A process of suffixation or infixation (in English) which adapts a word to a grammatical function without changing lexical meaning. (Francis, 593)

Suffix: An affix attached to the end of a word or a root. An affix which follows a base. (Francis, 181)

1. -s means noun plural, and sounds /s/ or /z/ : cats/s/; dogs/z/; dishes/z/
2. -'s means noun singular possessive, and sounds /s/ or /z/: cat's/s/; dog's/z/; dish's/z/; book's/s/; boy's/z/; Charles's/z/
3. -s' means noun plural possessive, and sounds /s/ or /z/: cats'/s/; dogs'/z/; dishes'/z/; books'/s/; boys'/z/; Charleses' /z/
4. -s means possessive pronouns, and sounds /z/ and /s/: ours/z/; yours/z/; his/z/; hers/z/; theirs/z/; its/s/
5. -s means third person, singular, present tense of verbs, and sounds /s/ or /z/: sings/z/; wishes/z/; flirts/s/; thinks/s/; tries/z/; talks/s/ (The only irregular forms are do-does; have-has; say-says.)

*6. -'s means contraction of a noun or pronoun and a verb:
*This is not an inflectional suffix.

Examples: it's /s/ means "it is" (contrast its)
there's /z/ means "there is" (contrast theirs)
he's /z/ means "he is" or "he has"
she's /z/ means "she is" or "she has"

HISTORY OF -S as an inflectional suffix (Note the vowel shift from /a/ to /ɔ/ to /o/)

	OE sing.	ME sing.	MnE sing.	OE pl.	ME pl.	MnE pl.
Nom.	stan	stan	stone	stanas	stanes	stones
Gen.	stanes	stanes	stone's	stana	stanes	stones'
Dat.	stane	stan	———	stanum	stanes	———
Acc.	stan	stan	———	stanas	stanes	———

The origin of the plural -s is quite obviously the ME plural which had "leveled" or simplified the more complex inflections of the OE. Besides the OE forms cited here, there were many other alternatives.

POSSESSIVE

The languages derived from Latin, the Romance languages, have dropped the genitive inflection, its function being performed by the word of.

L. "pater Caroli" Charles's father
Sp. "el padre de Carlos"
Fr. "le pere de Charles"
It. "il padre di carlo"

English has not lost its genitive inflection, but can use either construction: "Charles's father" or "the father of Charles"

Refer again to the above chart. Fill in the missing MnE forms. "Leveling" is again obvious.

Refer to the Prologue to Chaucer's Canterbury Tales, lines 47, 293-4, 556, and 700.

Ful worthy was he in his lordes werre. (Speaking of the Knight)
...have at his beddes heed twenty bookes (Speaking of the Clerk's room at Oxford)
Rede as the bristles of a sowes eres (Speaking of the red hairs in the Miller's wart)
...in a glas he hadde pigges bones (Speaking of the Pardoner's relics)

Note the -es and the absence of the apostrophe. WHERE DID THE APOSTROPHE COME FROM? Shakespeare did not use it; modern printers have inserted it.

"Helens beauty" "natures truth" "Hyperions curls"

By Shakespeare's time, the early 17th c., people were largely unaware of the OE genitive and they searched for an "explanation" for the -s. Many decided it was an abbreviated form of his, the possessive of it:

OE third person neuter singular pronoun

Nom.	hit	became ME	hit
Gen.	his	ME	his
Dat.	him	ME	—
Acc.	hit	ME	hit

Note: These are only the most common forms.

In the unstressed position the h sound weakened and by the beginning of the modern period hit had become it in the nominative and accusative. The possessive, however, was still his. This continued until the middle of the 17th century.

Shakespeare has Portia say: "How far that little candle throws his beams." The King James Bible has: "If the salt lost his savor, where with shall it be salted."

By the mid-17th century, people EXPLAINED the -s as the abbreviation of *his*, the apostrophe indicating the missing *hi*. So Ben Jonson wrote in his *Grammar*: 1692:

> "the Emperor, his court" should be "the Emperor's court" ..."thereby to avoid the gross Syntax of the *Pronoun his* joining with a Noun."

Thus what was felt to be a sign of the omitted letters *hi* became our common sign of the possessive. Eventually the use of it in the plural possessive followed.

At the same time there was a tendency to develop the form *its*. It was probably used colloquially for some time before it appeared in print in a 1597 book of madrigals. The King James Bible, however, does not use *its*. It uses *of it* or *thereof* in places where we would find *its* more natural.

> "Two cubits and a half was the length of it."
> "Two cubits was the length thereof."

Shakespeare sometimes uses plain *it* as a possessive:

> Horatio says of the ghost, "It lifted up *it* head."
> The fool in *King Lear* says, "The hedge-sparrow fed the cuckoo so long that it had *it* head bit off by *it* young."

Its became gradually accepted. When apostrophes became common, they were added to the personal pronouns as well as to nouns, with the result that before 1800 the present possessive, *its*, was written with an apostrophe, *it's*.

The contraction *it's* from *it is* is also a recent development. Earlier the contraction was usually *'tis*, and there were many similar forms: *'twas*, *to't*, *for't*, etc.

To the Teacher: This unit has not attempted to *teach* in the sense of mastering the proper use of the apostrophe. But, of course, ample drill material is available. It is hoped that the "study in depth" has furnished insights that stimulate interest. Maybe the knowledge will affect practice.

Further research: students can look up *won't* in the dictionary to account for the *o*.

The final part of the supplementary section includes motivational devices and audio-visual materials. A phonemic crossword puzzle was created by one of the participants; another designed a phonemic computer; another produced a set of slides containing diagrammatic descriptions of the way the phonemes of English are produced. Three participants produced a very thorough teaching unit on the suprasegmentals of spoken English; this unit could be incorporated in the fifteen-day package, or taught as a two-week unit.

The following materials were excerpted from the section on motivational and audio-visual material:

Motivational Devices

The following procedures are not merely for kicks; they are effective means of teaching important concepts as well as being interesting in themselves because of their novelty.

1. "Play" intonation contours on a slide whistle or a kazoo. This technique can be used in many ways: 1. At the beginning of the suprasegmentals; 2. To demonstrate differences in meaning depending on intonation contours alone. (Play the same sentence with different patterns to show variation in emotion, etc.) 3. As part of a review before a test, give the students a page of sentences, again with some duplication of wording, play the contours, and ask the students to mark the contours. 4. Play lines of poetry to find the best reading.

2. Make tapes at one speed, and play them at one-half that speed. This has the effect of abstracting the contour but blurring the words beyond distinction, thus isolating the contour, as does the slide whistle technique. The tape method is more sophisticated, and more technically demanding.

3. Ask students who have access to little children (at the babbling age) to record a fairly long period of babbling. Play the recordings in class for the students to distinguish distinct phonemes. This can be a very interesting session leading to speculation about the origin of speech, the complexity of language learning, the ease with which man masters this complexity. Students have a new respect for their own linguistic achievement. If there are any speakers or students of foreign languages, they may add to the interest by identifying phonemes of a foreign language.

. . . .

2. Reaction to the Phonology

Three adverse criticisms recurred in the reports of the participants. It was difficult to work a two-to-four week unit into an already full senior English syllabus: "I had difficulty teaching phonology thoroughly in three weeks. And it was hard to find more time than that," one participant wrote.

Another said, "I was frequently asked to justify the time spent on the phonology unit." Some students wanted to know the reasons for studying phonology, especially at the senior level. One girl asked, "Why study this material? I already know how to talk." Finally, some students felt that the study of phonology should come earlier in school. "The phonology material is too simple for seniors. It embarrasses them to work with what they consider to be third-grade units." "There was an oft-stated sentiment among students that the material was too elementary for them, and that they could not see what use they could make of it. The consensus of the group was that phonology should be studied at a much earlier grade level."

In general, however, the reaction of students and teachers was enthusiastic and positive. Participants found the phonology useful in aiding students with spelling: "The phonemic alphabet gave us a language through which we could discuss their misspellings." "One student found that his personal abuse of spelling convention was closely related to phonemic 'spelling.'" In addition, the teachers used the material on the suprasegmental phonemes and intonation contours to reinforce the conventional rules of punctuation: "Intonation contours have their limitations as aids to punctuation, but they do give us clues. The signals given in speech aid in understanding the structure, and then punctuation can be supplied to mark this structure." "Intonation contours were particularly valuable in explaining series punctuation and punctuation of non-restrictive elements." "Interest in the project material rose when we got to the suprasegmentals." "The study of suprasegmentals led students to pay more attention to punctuation; it made them more observant." The preceding remarks were typical of all reports of participants, all of whom agreed that the phonology units were helpful in teaching punctuation. All also agreed that the units were fresh and stimulating to students, most of whom had become sated with conventional spelling, punctuation, and grammar. One teacher wrote: "This fresh approach to language provided an exciting change, and a foundation for an intriguing process of discovery. True, a sense of uncertainty entered the classroom with the linguistic approach, but the accompanying sense of adventure more than compensated for the uncertainty." Another said, "Excitement ran through the high school building after we had begun studying phonemic transcription. The marquee outside said /meriy krismis/ until several phone calls from irate P.T.A. members demanded better spelling. Notes on the bulletin board appeared in phonemic transcription. The PTA placard first-award went to a sign done on phonemics. Yearbook autographs were done phonemic transcription. One student who went for a visit to Texas corresponded with a friend in phonemics. Disturbed, the mother brought the postcard to school to check on the existence of some secret society."

The following anecdote epitomizes the success of the phonology material. One of the project directors was sitting in a classroom where a unit in suprasegmental phonemes was beginning. Before the lesson began, the teacher asked students to punctuate a list of sentences containing restrictive and non-restrictive elements, using the conventional rules of punctuation. She collected the papers after the students had finished. Later, after the unit on suprasegmentals was completed, she passed out another copy of the list of sentences and asked the students to punctuate them using the conventional rules *and* their newly-acquired knowledge. The student sitting next to the director leaned over and confided this admission: "I didn't try any of the sentences on the first sheet, but I have tried all of these. I think I may be getting somewhere with punctuation now." The teacher said his participation in the exercise was the first attempt he had made during the entire semester.

3. Morphology:

The morphology unit was designed to help students understand the process of defining terms, to show them that language involves systems of sounds and symbols, to help them understand the concept of form and position classes, and to suggest solutions to some usage problems. The unit was planned to complement the grammar which high school students already know, and generally to enrich the understanding they have of their language.

Explanations and exercises are comprehensive; they can be adapted for use in long or short units. For example, the material can be used in the following ways: (1) in an honors section as enrichment preparation for further study of language in college, (2) in conjunction with the essay of definition, a standard assignment in senior English, and (3) to illustrate the transition of English from a highly inflected language to a word order language in which only a few inflexional suffixes remain as form class markers. Because it is highly unlikely that the entire unit would be taught at the senior high school level, it is not divided into daily or weekly lesson plans. Materials are designed to be adapted, supplemented, and compressed as the individual teaching situation requires. The material can be used preceding or following a unit on syntax, after a unit on phonology, in an honors senior English class as enrichment.

The first section of teaching materials is concerned with the parts of speech. An introduction explains the approach to be used, and helps students understand the difference between lexical and grammatical meaning:

Introduction

As we begin our study of parts of speech let's abandon the notion that lexical, or dictionary, meanings of words are useful in establishing the differences among the various parts of speech. Take, for example, the verbs *move* and *assist*. If we define these words by their lexical meanings, as our more traditional grammar would do it, we would call them "action words." *Movement* and *assistance* express action too, but they are not verbs. So, while these four words express a kind of common meaning, action, this meaning is too general to be of much use to us.

Since we will no longer define parts of speech by their lexical meanings, we'll have to look for something else. *Move* and *assist* are alike in that they occur in a number of positions in English sentences. They will both fill the blank space in

Let's ______________. Let's move. Let's assist.
and in He'll ______________. He'll move. He'll assist.
and in We ______________ -ed. We moved. We assisted.

Thus, we will say that these two "pattern" in the same way. We also notice that *movement* and *assistance* will not pattern in the three positions occupied by *move* and *assist* because they are differentiated from them by the endings *-ment* and *-ance*.

This leads us to the second criterion for identifying parts of speech, their suffixes, or endings. We'll discuss these more fully later on, but let's turn to an example for a moment. Think about the blank space in

This is ______________.

We can fill this blank with adjectives like *warm* or *ridiculous* or with nouns like *warmth* or *ridiculousness*. Thus, we call this position shared because it can be filled by both adjectives and nouns. The three positions above occupied by *move* and *assist* are unshared since they can be filled only by verbs.

In a shared position we cannot identify by position alone the part of speech that fills it. The words that fill this position must be identified in some other way such as by the noun endings *-th* on *warmth* and *-ness* on *ridiculousness*.

Sometimes we can identify parts of speech by the small words like to, a, the, may, that go with them.

So far, then, we have mentioned three criteria for identifying parts of speech: position in a pattern, endings, and recognizable small words which are called structure words.

The discussion to this point can be summarized by considering this sentence:

The murning crannels stelled over to the rix and burfed morgously.

Can you name all the parts of speech in this sentence? Consider the grammatical signals of position in a pattern, word endings, and recognizable small words as you answer the following questions.

1. What words do you immediately recognize?
2. What is the subject?
3. Is this a sentence?
4. Is there a verb? If so, how can you identify it?
5. Are there any adverb ideas of time, place, or manner?
6. How many parts of speech can you identify by endings?
7. How many parts of speech can you identify by word order?
8. Do recognizable small words help in identifying sentence elements?
9. What is the "tone" of this group of words? Happy or sad?
10. What words have sounds that suggest a "tone" or line of action?
11. Substitute real words for the nonsense ones. Be sure that the substituted words have the proper endings.

Before we go on to discuss parts of speech we must consider one more feature of description. As you parsed the nonsense sentence above, you came across the pattern

The murning crannels

Quite clearly we have here the sequence "article-modifier-noun." The position occupied by murning is shared, e.g., we can place in this position the adjective round, the verb burning, or the noun stone.

the round house
the burning house
the stone house

Each of the underlined words is a different part of speech, yet each performs the modifying function of an adjective.

Accordingly, we will call all words and word-groups that occur in the position before a noun and after an article *adjectivals*. Now we are using one word, *adjective*, plus the suffix *-al*, to describe a *position class*. The suffix *-al* added to *adjective*, *adverb*, *noun*, or *verb** makes a word which describes the *position class* of words or word-groups that fill shared positions. One more example will suffice:

Consider the following pattern:

__________ are hungry.

The blank space is filled by the subject. Usually, the subject of a sentence is a noun:

Dogs are hungry.

But this position can be filled by larger constructions such as "article plus noun":

The dogs are hungry.

or by an "article plus adjective":

The poor are hungry.

or by a much larger word group:

All the little, old, brown dogs are hungry.

Sometimes a verb is the subject of a sentence:

Swimming is fun.

One way of describing the subject of a sentence, then, be it noun, article plus noun, article plus adjective, larger word group, or a verb, is to call the subject a *nominal*. *Nominal* means: "Any word or word-group filling a shared position most frequently occupied by a noun."

Word Classes

If we consider English words on the basis of their patterning, the positions they occupy in English sentences, we can divide them into four large groups and several smaller ones.

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*The term "verbal" as used here does not carry the conventional meaning of participial or infinitive forms. Rather, it refers to words occurring in verb position. Since the verb position is an unshared position, every word in verb position is simultaneously a verb and a verbal.

The words in the four larger groups are often identified as belonging to a particular group by their endings, e.g., nouns take plural s, verbs take -ing, adjectives and adverbs take -er, and -est, etc. Because of these, and many other distinctive features of form, we will call nouns, verbs, adjectives, and adverbs form class words. Form class words not only have distinctive forms, they also have lexical meaning when they stand alone.

In addition to the form classes, our language has a large number of other words. The function of these words is to connect the form class words and to expand and combine English sentence patterns in various ways. We will call these words structure words. Unlike form class words, structure words usually do not have lexical meaning. They have no meaning until they occur in English sentences.

Consider this group of words; each has a kind of minimal significance.

bus, on, to, went, the, home, his, man

Let's pull from this group the words with the most obvious lexical meanings:

bus, went, home, man

The words with the least lexical significance remain:

on, to, the, his

Now let's put the words with lexical meaning, the form class words, into an order that suggests a sentence meaning:

man went home bus

A sentence begins to form. But we need the structure words to connect the form class words and make a grammatical sentence.

The man went to his home on the bus.

Form class words, then, are nouns, verbs, adjectives, and adverbs. Structure words are prepositions, conjunctions, auxiliary verbs, qualifiers, noun determiners (articles), and pronouns.

. . . .

Following the Introduction are sections devoted to the conventional parts of speech: The Noun, The Verb and Auxiliaries, The Adjective, The Adverb, The Conjunction, Subordinator, and Sentence Connector, The Pronoun, and The Qualifier. In each section, the discussion begins with the traditional definition of the part of speech, and complements it with a descriptive definition, including definition by form and position. Each section contains relevant explanations and adequate exercises. The following excerpt from the unit on the adverb is a good sample of the treatment of the parts of speech:

THE ADVERB

Adverbs are conventionally defined in a functional manner as "a word that modifies a verb, an adjective, or another adverb." But adverbs are a miscellaneous group of words; many of them fit some of this definition, while others go beyond the definition. Further, adverbs are difficult to define because they can move around in English sentences without altering the essential meaning of the sentence.

Slowly he walked.
He *slowly* walked.
He walked *slowly*.

Thus, we cannot consistently identify adverbs by means of position.

Linguists have defined many different sub-classes of adverbs.[1] Before we discuss forms and positions, it might be well to decide just what we mean when we talk about "adverbs." There are three rather small sub-classes which we will not consider: sentence introducers (furthermore, however, nevertheless), "limiting adverbs" (just, only, even) and qualifiers (too, very, etc.). The latter word group has been treated in the discussion of adjectives and in a separate section.

Excising those three kinds of adverbs from our description, we have a class of words which can be described as modifiers of verbs. We will note one exception to this statement, adverbs that modify nouns.

Let's first look at some of the forms that adverbs take. Several kinds of adverbs can modify the verb in a position immediately following it. Derived adjectives which take the derivational suffix *-ly*, as well as base adjectives which add *-ly*, can both occur in post-position:

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[1] Compare C.C. Fries, *The Structure of English*, pp. 83-86, 92-94, 97-103, 132-141 and H.A. Gleason, *Linguistics and English Grammar*, pp. 129-132.

spoke *learnedly*
waited *hopefully*
drank *deeply*
saw *clearly*

Adverbs formed by the addition of derivational prefix *a-* to nouns, verbs, and adjectives occupy the same position:

moved *ahead*
washed *adrift*
went *along*

The same position after the verb is occupied by nouns which take the derivational suffixes *-wise* and *-ward(s)*:

crawled *crabwise*
measured *lengthwise*
travelled *forward*
gazes *backwards*

Determiners like *some*, *any*, *every*, and *no* which combine with nouns or structure words like *where* are in post-position:

ran *someplace*
go *anyway*
seen *everywhere*
went *nowhere*

In this position also are the prepositional-adverbs *in*, *on*, *out*, *up*, *down*, *over*, *under*, *inside*, *around*:

go *in*
walk *on*
put *out*
run *up*
walk *down*
jump *over*
crawl *under*
go *inside*
look *around*

Finally, there is a large group of words which are heterogeneous in form and which pattern as adverbials. Many of these words are also conjunctions, and most of them are "time" modifiers. Words like the following occur frequently as adverbials:

always
while
here
still
often
before
after
when
then
seldom
there
perhaps
even
till
now

The adverbs whose positions we will now describe are of four classes. These classifications, you will notice, are based on lexical meaning.

. . . .

The last part of the Morphology unit includes additional teaching materials. There is a short "Introduction to Morphology," designed to be used before the earlier section on parts of speech. An excellent unit synthesizing the basic concepts of morphology and traditional vocabulary building study includes full explanations and adequate exercises. "Derivational Suffixes," to be included after the material on parts of speech if the teacher desires, can serve as a spelling aid, by presenting the student with examples of analogous spellings (e.g., occurrence and abhorrence). In addition, the unit clearly shows the student one source of the word wealth of English, some words changing their form class and others modifying their shape and taking on a new meaning within the original form class. Also stressed is the fact that etymological information in dictionaries can help to sharpen one's understanding of a word.

Two units on definition conclude the teaching materials in the morphology section. One unit, "Using the parts of speech in a unit on formal definition," is an introduction to a senior English exploration of Aristotelian rules and categories of definition. The other unit is entitled "Using the Parts of Speech in Teaching the Senior Essay of Definition":

ESSAY OF DEFINITION

Procedure for Use of Parts of Speech Material in Essay of Definition

Introduction:

A frequent composition assignment in senior English courses is the essay of definition. This brief unit is intended to suggest ways in which the parts of speech materials can be used as subject matter for this kind of writing assignment. To be most effective, this unit should follow the study of the parts of speech. In addition, both the one-paragraph logical definition assignment and the four-to-six paragraph essay on rhetorical definition should be used.

Both we teachers and our students might share some of Alice's bewilderment when confronted with the problem of definition:

"There's glory for you!"

"I don't know what you mean by 'glory,'" Alice said.

Humpty Dumpty smiled contemptuously. "Of course you don't—till I tell you. I meant 'there's a nice knockdown argument for you.'"

"But 'glory' doesn't mean 'a nice knockdown argument,'" Alice objected.

"When I use a word," Humpty said in rather a scornful tone, "it means just what I choose it to mean—neither more nor less."

"The question is," said Alice, "whether you *can* make words mean so many different things."

"The question is," said Humpty Dumpty, "which is to be master—that's all."

(Lewis Carroll, *Through the Looking Glass*, Ch. VI.)

Although the composition books used in senior English courses suggest various methods of presenting the idea of definition, the following is offered as a valid approach—one to which the definitions in the parts of speech unit are applicable.

Objectives:

1. To teach techniques of the essay of definition.
2. To provide a useful body of related subject matter for the essay of definition.
3. To provide opportunity for the student to bring together, organize, and present his understanding of the newer concepts of language.

What is commonly called *real definition* is concerned with what a word stands for, as opposed to nominal definition, which is concerned with the etymology of a word. Two primary types of real definition are the logical definition and the rhetorical definition.

In a logical definition the subject is defined concisely in a pattern that may be expressed in the following formula:

subject of definition = class (genus) + differentia (e) example:

noun = form-class word + inflectional suffixes
derivational suffixes
positioning: before
verb, after determiner

In its development the essay of rhetorical definition may employ the pattern of the logical definition; however, the rhetorical development _extends_ the meaning of the subject. One or more of the following methods are used to develop this extended definition:

A. Examples or illustrations
B. Comparison and contrast
C. Analysis (dividing the subject into its parts)
D. Description

PROBLEMS IN LOGICAL DEFINITION

1. _Definition too inclusive or too exclusive:_

Read the following definition of a verb:

A verb is a word that indicates action or state of being.

Since many nouns in English "indicate action," this definition seems too broad and possibly ambiguous. Words like _jump_ and _climb_ and _hike_ "indicate" or "name" actions. By form and position tests we see that all three can be nouns.

Example: _jump_ (uninflected) _jumps_ (noun plural) FORM

Their _jumps_ were record-breaking. POSITION

Compare this definition of a verb with the one stated above:

The formal characteristics of the verb are _-s_, _-ing_, _-ed_, or equivalents. It occurs in verb phrases usually after the auxiliary; in statements it comes after the subject; in questions and commands it is often first.

Identify the problem in this definition:

A linguist is one who studies pronouns.

Obviously a linguist's field of study is not this narrow. Is this definition an improvement?

A linguist observes and describes the system of a language or languages, their elements, constructions, and complexities.

2. Circular definitions

Read the following definitions:

Usage study is the study of the use of words.

What have you learned from this definition? Is the next one clearer?

Usage study is concerned with the conventions of appropriate speaking and writing in a particular situation.

AVOID problems of inclusiveness, exclusiveness, and circularity in composing logical definitions.

TOPICS FOR LOGICAL DEFINITIONS (ONE PARAGRAPH)

A. One form-class word (noun, verb, adjective, or adverb)
B. A structure word (preposition, conjunction, auxiliary)

TOPICS FOR RHETORICAL ESSAY OF DEFINITION
(FOUR TO SIX PARAGRAPHS)

A. Inflections in English
B. Derivational affixes (Limit to one or two form-class words)
C. Grammar and Usage
D. Lexical and structural meanings

Bibliography:

Connolly, Francis X. A Rhetoric Case Book. New York: Harcourt, Brace, & Co., 1958.

Perrin, Porter G. Writer's Guide and Index to English. 4th Ed. Chicago: Scott, Foresman and Company, 1965. pp. 98-104.

4. Reaction to the Morphology

Three unfavorable reactions occurred as a result of use of the morphology unit. A few participants felt that the unit was too long and unwieldy to work into the context of an already full junior and senior syllabus; they wanted more structure in the material. Though most students were stimulated by the material, a few "...could not maintain high enough interest to benefit from the lessons without continued stimulation from without the unit." The material should be taught at an earlier level: "The parts of speech unit could be presented earlier, and even the more difficult material on morphology could be moved down into the grades." Finally, students who had taken Latin found considerable repetition in the unit: "They said that these were the same old prefixes and suffixes they had studied in sophomore Latin."

The numerous favorable comments can be grouped in four general reactions: The material is easily adapted for incorporation in eleventh and twelfth grade lesson plans; though a few participants criticized the general nature of the units (see the comment above), most liked the approach. Participants used the materials successfully in regular eleventh and twelfth grade lesson plans on vocabulary building, the parts of speech, or the essay of definition. Several teachers used the morphology lessons during the first ten minutes of the class session, and thus spread them over an entire semester. Second, the unit was found to be useful in teaching spelling and vocabulary building: "I built spelling attack and rules on the material; everything worked well." Third, students were led to use the dictionary and thesaurus: "...we managed to see that a sentence can often be improved by altering the part of speech of a key word. Previously, this sort of mental experimentation had not occurred to most of the students. I feel that this class became much more word-conscious than they had been before. And they consulted their dictionaries and thesauruses more often." Finally, students were helped to see grammar as a study which can be eclectic in nature; by using the material, the traditional definitions of the parts of speech could be supplemented instead of replaced. Students "...had greater tolerance for eclectic patch jobs and multiple definition."

5. History of the Language:

There are four main sections in the material dealing with the history of the English language. Each is more rigidly structured than the morphology units: included are objectives, an explanatory note to the teacher, teaching situations to which the unit can be adapted, daily lesson plans with exercises and tests, a description of audio-visual materials, and a selected bibliography.

The first section, "The History of the Sounds of English," is designed to cover four class days. Its objectives are to introduce and illustrate some types of sound changes which have occurred in English over the past thousand years, to give an overview of Grimm's Law and of the Great Vowel Shift and their results, and to develop an awareness of the systematic sound changes which occur in the historical development of a language. This introductory unit includes some lecture material, and inductive presentations of the various changes in English sounds. The presentation can be used as enrichment at any point in the semester, or it is particularly appropriate as a transition between Chaucer's work and a unit on Shakespeare. Lesson one can be incorporated in a unit on Beowulf, lessons two and three in a unit on Chaucer, and lesson four in a unit on Shakespeare. Also, the material can be taught as a preface to a unit on spelling. The lesson plan for the fourth day will illustrate the method of the unit:

Fourth Day:

Discussion of Exercise VI.

Pronunciation guide and summary chart on the Great Vowel Shift

The process by which these vowels became what they are in Modern English was known as the Great Vowel Shift. No one knows why it took place, but the whole change happened over a relatively short period of time during the 14th century. And as we have seen, it happened only in English, not in any of the languages closely related to it, such as German and Latin.

It is possible to learn in a fairly short time to pronounce Chaucer's English in something like the way Chaucer pronounced it. In fact, by remembering the following principles, one can arrive at a rough approximation of the sounds of Middle English:

1. Pronounce the short vowels as they are pronounced today.
2. Pronounce the long vowels with their "continental" values.
3. Pronounce all the letters and syllables, except any final e's that would interfere with the meter of the poetry.

TO THE TEACHER: Pronounce a few lines slowly, so that the student can hear how the above system works. Allow some time for students to pronounce some lines also.

Notice that all the letters of night and knight were pronounced in Middle English. Thus one can see how changes in pronunciation without corresponding changes in spelling have made spelling one of our greatest problems in Modern English. Not only that, but the problem was in some cases compounded by the 18th century scholars who set about to fix or standardize the spelling of English. Observing night and light, they established the spelling of delight by analogy, although the word was regularly spelled much more sensibly *delite*. Notice also that the final sound of Middle English *night*, while no longer found in Modern English, is very much a part of Modern German and Scottish.

Do you hear any difference between the vowel sounds at the beginnings of these words: *ago*, *upon*, *opinion*? Actually there is no difference. In all periods of the language the vowels of the unstressed syllables have had a tendency to weaken and then often to disappear. This weakening has also occurred in middle and final syllables. Consider *introduce*, *kingdom*, *drama*, *breakfast*, *Monday*. How does this create another spelling problem? Also compare the French *mouton*, English *mutton*; French *raisin*, English *raisin*; French *bonte*, English *bounty*.

The following chart shows the shift in vowel sounds that took place between the times of Chaucer and Shakespeare (Middle English and Early Modern).

O.E.		*M.E.*		*Mn.E.*	*O.E.*	*M.E.*	*Mn.E.*
æ:	—	æ:	>	i	sǣ, clǣne	see, clene	sea, clean
e:		e:	>	i	grēne, tēþ	grene, tooth	green, teeth
i:, y:	–	i:	>	ai	īs, hȳdan	ise, hide	ice, hide
a:	>	ɔ:	>	o	bān, bāt	boon, bote	bone, boat
o:	—	o:	>	u	tōþ, sōna	tooth, soone	tooth, soon
u:	—	u:	>	au	mūþ, hūs	mouthe, hous	mouth, house

General Exercise (Supplementary):

Assignment to be done during three week period: (if you wish to expand unit). The students will be instructed to "devour" newspapers, magazines, conversations, signs, radio, and television programs, and any other sources of current language at their disposal. Wherever new words are being generated, the students should collect and record data. At the end of the three week period, they will be asked to submit their data, along with any relevant clippings which they have accumulated. The material will then be discussed and analyzed by the class.

. . . .

The second main unit in the history of the English language materials is "The Development of the Grammatical Signals of Modern English," which is designed to be taught in ten days. The purpose of the unit is to provide an overview of the origins and major signals of Modern English through examination of some of the basic historical aspects of English. The student's attention is focused on the factors which make English what it is today—a result of the evolution which a natural language undergoes throughout its history.

The unit can be presented after the study of Old English selections to provide an understanding of the language background of the period, and to provide insight into the basic formation of Old English from Low-German and Old Norse. In a basic language and composition course, this unit can serve as an introduction to present-day English grammar; it can also provide enrichment after the study of syntax by giving a historical perspective and an understanding of structural changes.

Individual lessons, with materials, explanations, exercises, and tests, are included with the ten-day unit. Subjects for the lessons are these:

Definition of the term "language signal"	Day 1
Structural Systems in a language	Day 2
Characteristics of Indo-European	Day 3
The Germanic languages	Day 4
Historical development of English	Day 5
Old English	Day 6
Middle English	Day 7
Signals of Modern English	Day 8
Summary exercises and review	Day 9
Final test	Day 10

The following pages reproduce the lesson plan for Day 8:

The Structure and Signals of Modern English - 1 day

WHAT MAKES ENGLISH ENGLISH?

Objectives:

1. To help students become aware of language as a system of signals, or rather as several systems of signals fusing to achieve communication.

2. To help students to discover the six types of signals in English; the lexical, the three grammatical, and the two phonemic.

3. To help students realize that the spoken language is primary and written language is an imperfect imitation of the original.

Procedure: The following two pages should be duplicated for the students. Exercise I is aimed at breaking down the impulse to equate a language with its lexicon plus a bit of organization, as well as to consider the written language as the norm.

Exercise I, part 2, must be spoken by the teacher. Item 1 is merely a Greek transliteration of "happy birthday." Item 3 is French for "(The) winter is cold." Item 9 should be read with the French equivalents: Tees ees ees aht, or possibly Zees ees ees aht. Item 5 is in Latin word order and is not usual in English.

Most students will have a list of signals somewhat as follows for Part 3: words (lexicon), sounds or pronunciation (phonemes), endings (inflections), word order, articles (structure or function words).

After the sentences have been turned into normal English in part 4, use them as a basis for Exercise II. Here the teacher reads the sentences without the suprasegmental phonemes, and again elicits the answers from the students. The answers will be somewhat as follows: tone(pitch), accent (stress), and pause (juncture).

What makes English English?

Exercise I.

Part I. In the first space after each group of words below write E if the group is English, N if it is not English, and P if it is partly English.

	1	2
1. ἁπι βερθdη	____	____
2. The equuses curreed por the hommost castellum.	____	____
3. L'hiver est froid.	____	____
4. The boy ate the apple.	____	____
5. On the map Rome and the provinces of Rome we see.	____	____
6. apple ate The the boy	____	____
7. Some murkles, while riffling on the smuck, baskered a krimb, and were smutchoned by the arklo lither.	____	____
8. Three boy eat three apple yesterday.	____	____

9. This is his hat. ______ ______

10. Boy ate apple. ______ ______

Part 2. Now listen as I read the word groups. If you want to change your answer, indicate the change by placing a plus sign (+) in column 2 if the group seems more English than at first, or a minus sign (-) if it seems to be less so.

Part 3. Basing your answers on your reconsidered opinions in part 2, now indicate what was English about each sentence, and what was non-English.

English Non-English

1.________________________ ________________________
2.________________________ ________________________
3.________________________ ________________________
4.________________________ ________________________
5.________________________ ________________________
6.________________________ ________________________
7.________________________ ________________________
8.________________________ ________________________
9.________________________ ________________________
10.________________________ ________________________

Exercise I, part 4. Revise all the word groups into "normal" English sentences.

1.____
2.____
3.____
4.____
5.____
6.____
7.____
8.____
9.____
10.____

Exercise II. As the revised sentences are read aloud, in the space after each number write what you find to be non-English in the sentence.

1.____

2.____

3.____

4.____

5.____

6.____

7.____

8.____

9.____

10.____

9. Research topics and supplementary exercises - 2 days

A. Compare a passage from *The Canterbury Tales* in Chaucer's Middle English with a reliable modern verse translation. What differences can you discover in word order and inflections?

B. There is much discussion about the establishment of a "World Language." What syntactic characteristics would you recommend for this universal language? What modern language is most like this language you propose in structure?

C. One instance of a non-English structure persists today in English. It is the placement of adjectives after nouns as is particularly the case in French. Phrases like "blood royal" and "body politic" are in contemporary use: poets frequently use this inversion for effect. What other examples of this inversion can you cite?

D. What factors can you suggest to explain that *whom* is dropping from use at the expense of *who*? Another example of this same trend is the fact that *more* and *most* are spreading at the expense of *er* and *est* suffixes. What is happening to the distinctions between *shall* and *will*, and between *can* and *may*?

E. Inversions in English Poetry

This section on inversions in poetry may demonstrate that English word order is still quite flexible. However, without the inflections of Old English, the Modern English inversions are sometimes ambiguous. The following lines from poetry illustrate various inversions:

Here subterranean works and cities see ....(object-imperative)

Bright Thames the brightest beauties yield ...(s—o—v)

What though no credit doubting wits may give ...(o—s—v)

Among the shepherd-grooms no mate/ Hath he ....((o—v—s)

The God who darts around the world his rays ..(s—v—prep—o)

But fortune's gifts if each alike possessed ..(o—conj—s—v)

Unless aside thy people had been thrown ....(adv—s—v)

Swift on his sooty pinions flits the gnome ..(adv—prep—v—s)

O thou! Of bus'ness the directing soul ... (prep—s)

Not tyrants fierce that unrepenting die ... (n—adj)

(from Seymour B. Chatman, "Linguistics and Teaching Introductory Literature," in Harold B. Allen, *Readings in Applied English Linguistics*, Second Edition, (New York, 1964), p. 505.)

Locate and analyze other inverted sentences in English. Notice particularly the degree of clarity and effectiveness the inversions achieve.

. . . .

The third section of the history of the language section is entitled "Historical Development of English Spelling," and is divided into two units of five days and four days. Appendixes contain additional teaching material which will enable the teacher to expand the unit if he desires to do so.

The introduction to the unit explains the objectives, and presents the general method:

HISTORICAL DEVELOPMENT OF ENGLISH SPELLING: A Five-Day Unit

Objectives:

To give some historical explanations for the present chaos

To examine the problem of spelling reform: arguments for and against

To aid students in the development of an understanding of, and sympathy toward, the steady and seemingly capricious changes which occur in language.

Note to the Teacher:

Too often today teachers simply mark misspelled words without attempting to show students why they misspell. One good way of helping students understand their problem is by a brief study of phonemics; showing the relationship between the spoken language and the written language can be very helpful in eliminating misspellings involving omission of syllables, clipping, omission of inflections, etc.

Another approach to the spelling problem is historical. Students will be more likely to develop a sensitivity toward and a sympathy for our spelling system if they understand how it developed. Also, they can move toward a larger goal; the discovery of ways in which a language develops, and perhaps some of the reasons for the changes. At the senior high school level, it is very important that we stress the historical in language as well as the practical. Certainly seniors are told again and again that they should learn to spell correctly so that they can earn more money after they graduate, or so that they can be successful in freshman composition.

Juniors and seniors in high school should study this unit, and the units on spelling which follow, not alone to help them with their own spelling, but to increase their knowledge of their own language and how it operates. Studying the development of the English spelling system can well be its own reward. We should study it because it is the study of our language, of our spelling system.

Historical linguistics is especially useful at the senior high school level. Students respond to the historical, to the analytical, to the inductive. The unit utilizes all three approaches. It can be adapted to the following situations:

Senior English, before or after a unit on Beowulf or Chaucer
Junior or Senior English, after a unit on history of the language
Junior or Senior, after a unit on lexicography (especially one
which stresses etymology. See Unit No. IV, "Etymology.")
Junior or Senior, after a unit on Phonemics (See "Phonology" in
the N.I.U. series)
Senior Honors, as supplementary material for use with Beowulf,
Chaucer, Shakespeare, etc.

Time: Five days, one period a day

. . . .

The fourth section of the history of the language materials is a unit on etymology, designed to be taught in two weeks. The first page of the unit follows:

IV. ETYMOLOGY: Ten-Day Unit

Note to the Teacher:

This unit on etymology could well follow work in lexicography at the sophomore level; or it could serve as an introductory unit to more detailed study on the historical development of English; or it could well come after the study of Beowulf and before Chaucer and Shakespeare; or it could be placed after work in morphemics.

The unit contains several exercises which may be used variously by students. Some may do them all, whereas most will do only some of them, depending on time and on teacher assignments. Some of the exercises may be studied in class; some should be written; some will be discussed through group work or by having oral reports on the material. These exercises and activities can be and should be tailored to fit the class requirements and needs. (Some of the exercises may well be used as tests.)

The entire unit can be accomplished in ten days; if all activities are performed and special projects assigned, however, another week may be involved, although most of this work would be done out of class.

Suggested time allowances for the average class are:

Lesson One — one day
Two — two days
Three - one day
Four
Five - one day

Lesson Six & Seven — one day
Eight — one day
Nine — one day
Ten — two days

Information and exercises for the etymology unit are adapted from Hixson and Colodny's *Word Ways*, Baugh's *A History of the English Language*, and Robertson and Cassidy's *The Development of Modern English*.

. . . .

6. Reaction to the History of the Language

Reactions to the units were generally favorable. Participants did not, however, respond with strong comments either praising the materials or condemning them. One possible reason for this somewhat neutral reaction may be the fact that no single participant used all of the units; more than with any other section of the materials developed by the Curriculum Center, participants excerpted parts of the history of the language units and incorporated them into other teaching plans. Some teachers stated that the materials repeated information given in the regular textbook: "The historical development of English was presented within the study of Old and Middle English literature. Our text for the senior class (Craig's English Literature, Ginn, 1964) provides some excellent material on the historical development of English. Our project materials were used to supplement the text." A few teachers thought that the units were too technical for high school students. Most, however, praised the units as being eminently teachable: "My students enjoyed the history of the language material we did this year, the first time I ever had a class that did." "The students in my class found that the study of the history of the English language emphasized an area of language study which was fascinating and novel. It was easy to fit the units into our survey of English literature."

7. Transformational Grammar:

The final group of materials developed by the Northern Illinois University Curriculum Center is divided into four main parts; appendixes contain some supplementary teaching material, a bibliography, and a glossary. Section I, "An Introduction to Transformational Grammar," defines and illustrates the approach, and compares it with structural and traditional grammar. This section, designed to precede Section II, should take one class period. If the teacher wishes to use Section I alone, however, he may do so, expanding it to a week by using material presented in the Appendixes.

Section II, "Phrase Structure Rules," should take two weeks. Following is the day-by-day lesson plan for the unit:

Introduction (See Section I)	Day 1
Phrase Structure: Basic Sentence Type 1	Day 2
Basic Sentence Type 2	Day 3
Basic Sentence Type 3	Day 4
Basic Sentence Type 4	Day 5
Verb phrase structure rules	Day 6
Adverb phrase structure rules	Day 7
Noun phrase structure rules	Day 8
Adjective phrase structure rules	Day 9
Final test	Day 10

Section II, "Transformations," describes and illustrates certain single-base and double-base transformations; it should take about five class days. By using the three teaching sections, a unit in transformational grammar taking from three to four weeks can be developed.

The three sections do not, however, present a complete transformational grammar. Transformations included in Section II are included for two reasons: to introduce students to the process of transformation and the variety of its operations; and to teach them certain transformations which will help them eliminate errors from their writing by showing them the reasons for the errors.

Section IV, "Transformational Grammar and Writing," is a suggested approach for the use of transformational grammar in the analysis of student writing errors. The section is not intended as a teaching unit, though it could be adapted for classroom use as a logical conclusion to the lessons in Sections I, II, and III.

The materials on transformational grammar were incorporated into various parts of the English program in years eleven and twelve: (1) They were used in conjunction with a unit in traditional grammar and one in structural grammar. For example, Sections I and II were used to supplement a unit in traditional diagramming, and they, with Section III, followed units in phonology and morphology. (2) They were used to introduce a unit in composition. (3) They were helpful adjuncts to a unit in dialectology. (4) They were used as enrichment materials in honors classes and in college preparatory classes. One experienced high school teacher spread the material over an entire semester, using the first ten minutes of each class period for transformational grammar.

Many books on transformational grammar ask students to forget traditional grammar, to discard old concepts; they ask teachers to devote time and training to the new approach. Yet, the facts are these: Most high school students have studied only traditional grammar by the time they reach grade eleven. Most high school teachers are not prepared to teach transformational grammar and/or are wary of the approach. By using the materials in transformational grammar developed by the N.I.U. Curriculum Center, the teacher can incorporate into the body of his syllabus as little or as much of the new grammar as he chooses.

The materials in transformational grammar have six general objectives:

To define transformational grammar and its method,
To compare and contrast transformational grammar, structural

grammar, and traditional grammar,

To help students understand the reasons for some of their writing inadequacies, and to provide them with the tools for removing the inadequacies,

To lead students to an understanding of linguistics operations,

To help students discover some of the bases for their intuitions concerning language, and

To stimulate students' intellectual curiosity concerning their language.

The following pages contain sample materials from Sections I, II, III, and IV of the Transformational Grammar for High School.

Section I

These three exercises and the one-day unit "An Introduction to Transformational Grammar":

Exercise One

This exercise will illustrate for you, and give you practice in, working through phrase structure rules. We call this process writing their derivations. You are to follow the rules in their sequence. The single-shafted arrow $\longrightarrow$ means "is rewritten as." Here is a sequence of rules:

(1) $A \longrightarrow B + C$
(2) $B \longrightarrow E + D$
(3) $C \longrightarrow G + F$
(4) $F \longrightarrow L + J$
(5) $J \longrightarrow K + S + M$
(6) $K \longrightarrow I$
(7) $D \longrightarrow N$

Let's write the derivations of the first three rules. Rule (1) tells us that A is rewritten as B + C, so we get the derivation

$$B + C$$

Rule (2) asks that we rewrite B as E + D. Since C in not expanded but is retained in the derivation, the derivation from Rule (2) reads

$$E + D + C$$

Rule (3) asks us to rewrite C as G + F. Since E + D is not expanded but is retained in the derivation, the derivation from Rule (3) reads

$$E + D + G + F$$

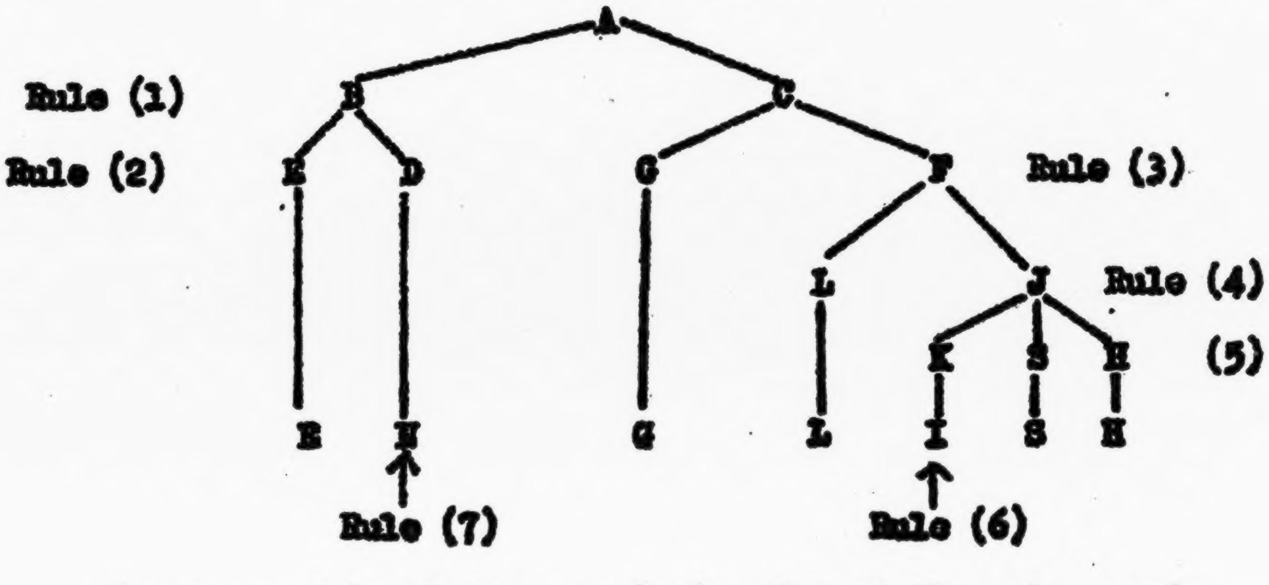
And so on. Now you write a derivation for each of the last four rules. Remember to retain in each new derivation the unexpanded items from the previous derivation.

If you have followed the rewrite rules correctly, the final derivation as a result of Rule (7) should produce

ENGLISH

This is called a terminal string. It is the final, or terminal, string of items which results from your writing of a derivation for each rule.

There is a way of illustrating, graphically, the manner in which the rules operate. This is just another kind of diagram. It is called a tree diagram. It illustrates the relationships that we stated in the rules.



Now cover this diagram, go back and read the rules again, and see if you can draw an identical tree from the rules.

Exercise Two

In order to test yourself, to see how well you understand the rules and the tree, write the phrase structure rules which will generate your last name. Then draw a tree diagram. The whole exercise will look like this:

(1) $A \longrightarrow B + C$

(2) $B \longrightarrow S + M$

(3) $C \longrightarrow I + J$

(4) $J \longrightarrow T + N$

(5) $N \longrightarrow H$

Derivations from the rules:

(1) $B + C$

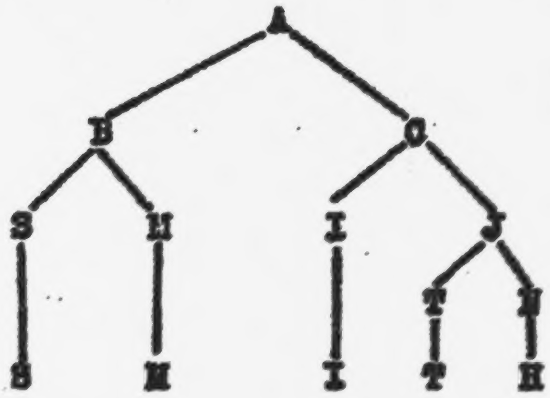
(2) $S + M + C$

(3) $S + M + I + J$

(4) $S + M + I + T + N$

(5) $S + M + I + T + H$

Tree diagram, drawn from the rules:



Exercise Three

Write the final derivation from the following rules. Then draw a tree diagram based on your write-out of the rules. One final derivation will be "grammar."

$A \longrightarrow B + D$

$B \longrightarrow C + E$

$D \longrightarrow \begin{Bmatrix} F \\ G \end{Bmatrix}$ You have a choice here. Select F or G.

$C \longrightarrow g$

$E \longrightarrow \begin{Bmatrix} r \\ re \end{Bmatrix}$ Select r or re.

$F \longrightarrow H + I$

$G \longrightarrow \begin{Bmatrix} J \\ K \end{Bmatrix}$ Select J or K.

$H \longrightarrow L + M$

$J \longrightarrow K + L$

$K \longrightarrow E$

$$L \longrightarrow \begin{Bmatrix} a \\ at \end{Bmatrix} \quad \text{Select a or at.}$$
$$M \longrightarrow mm$$
$$I \longrightarrow er$$

Section II

PHRASE STRUCTURE

Basic Sentence Type I:

Consider the following utterances. What do they have in common?

1. Puppies bark.
2. All the small poodle puppies in the window of the pet store bark furiously at the children standing outside.

Which of the two sentences seems to be more "basic"? Which seems to be based on the other?

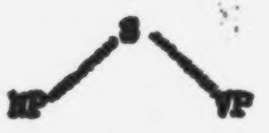
In English we are able to construct an infinite number and variety of sentences. But if we examine the sentences we use, we find that they all derive from a few basic sentence types.

The basic description of a sentence divides it into two parts, which we have traditionally called the subject and the predicate. Thus puppies is the subject and bark is the predicate. In the second sentence, All the small poodle puppies in the window of the pet store is the subject; bark furiously at the children standing outside is the predicate. The complete subject and complete predicate of traditional grammar are called the noun phrase (NP) and the verb phrase (VP) in our grammar. (Later we will see that the term predicate will also be used in a different, more limited meaning. It is important to think of each term only in the sense in which it is used in this grammar.) The basic structure of all English sentences can be represented symbolically as follows:

$$S \longrightarrow NP + VP$$

This formula indicates that the sentence (S) consists of a noun phrase (NP) and a verb phrase (VP). The arrow means "consists of," but we may also read the arrow "is rewritten as." Thus the above formula says: "Sentence is rewritten as noun phrase plus verb phrase."

A simple diagram illustrates the basic structure of English sentences.



Puppies	bark
All the small poodle puppies in the window of the pet store	bark furiously at the children standing outside.

An examination of English sentences reveals that there are four basic sentence types from which all other sentences are formed.

Type I: John is a sophomore.
Type II: John seems happy.
Type III: John sleeps.
Type IV: John studies chemistry.

After taking a closer look at the four types, we shall see how from these kernel sentences the infinite sentences of English may be formed.

Type I:

Type I is illustrated in the following sentences:

The puppy is a terrier.
The puppy is hungry.
The puppy is here.
The puppy is on the porch.

For these sentences, as for all English sentences, the formula is S ⟶ NP + VP. VP consists of several elements. We may write a rule to express VP as follows:

VP ⟶ Aux + MV

Aux represents auxiliary, which always includes tense. Every English verb contains an aux, for it is impossible to express a predicate idea in English without including in it the concept of tense. There are two tenses in English, present and past. Further, these tenses have only two forms, the present-third person singular -s (sings, thinks, has) and the past -ed or its equivalent (sang, thought, had, jumped, laughed). We will see later that aux may also include a modal (will, shall, can, may, must); and/or have;

and/or *be*. But only tense must accompany the main verb. (Teacher: see Phrase Structure Rules, p.80)

The tense auxiliary may attach to the MV or to the first auxiliary. Example:

a) MV + affix: John *runs*; John jump*ed*; John r*an*.
b) the first aux: John *did* jump; John *could* jump;
John *had* jumped; John *was* jumping.

We can now write the following additional verb rules:

$$\text{Aux} \longrightarrow \text{Tn}$$

$$\text{Tn} \longrightarrow \begin{Bmatrix} \text{Pres} \\ \text{Past} \end{Bmatrix}$$

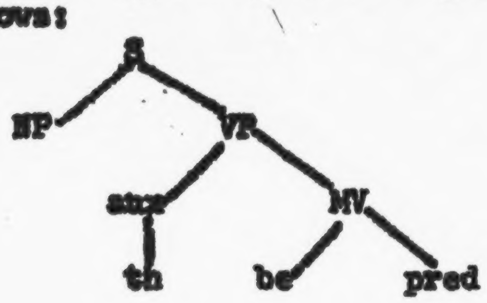
MV symbolizes *main verb*, which is developed in the following formula:

$$\text{MV} \longrightarrow \begin{Bmatrix} \text{be + pred} \\ \text{V} \end{Bmatrix}$$

This formula means that main verb rewrites as *be + pred* or *V*. The braces { } mean that we must choose one or the other of the symbols or sequences of symbols within: either *be + pred* or *V*. In all sentences of Type I, such as those listed above, the choice of *be + pred* has been made.

Notice that our rule for MV separates *be* from all other verbs. We shall treat *be* separately because it acts differently from other verbs in English sentences. For example, while most verbs have three or four forms, *be* has eight: be, am, is, are, was, were, being, been. Also notice that we are limiting *pred* (predicate) to the elements that follow *be*.

To illustrate sentences of Type I up to this point, we may add to our diagram as follows:



The following rule develops *pred*.

$$\text{pred} \longrightarrow \begin{Bmatrix}\text{NP}\\ \text{adj}\\ \text{loc}\end{Bmatrix}$$

Thus pred consists of *NP*, or *adj* (adjective), or *loc* (locative, or place adverb).

In *The puppy is a terrier*, pred is a *NP*, *a terrier*.
In *The puppy is hungry today*, pred is an *adj*, *hungry*.
In *The puppy is here*, pred is a *loc*, *here*.
In *The puppy is on the porch*, pred is a *loc*, *on the porch*.

Notice that *The puppy is hungry today* contains an additional element, *today*. *Today* is an optional adverb, an element that may be found at the end of any of the four basic sentence types.

Example: Type I: John is a sophomore *now*.
Type II: John seems happy *today*.
Type III: John sleeps *in the library*.
Type IV: John has studied chemistry *for three years*.

Thus we may add this element to our original rule for all sentences. By placing *adv* in parentheses, we indicate that it is optional: we may or may not choose it.

We now have enough rules to account in a fairly complete way for the basic Type I sentences we have been studying. Our rules, called phrase structure rules, are as follows:

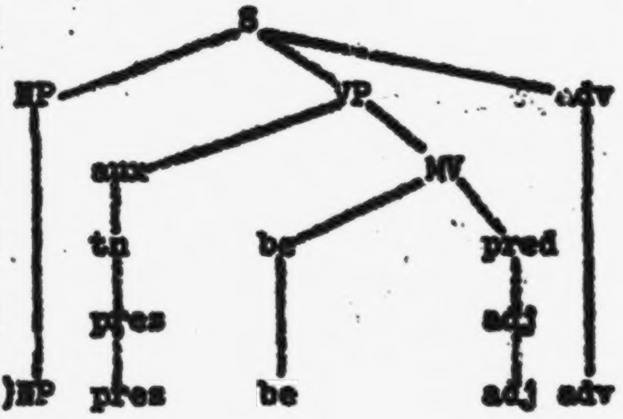
$$\begin{array}{lll}
\text{PS 1.} & \text{S} \longrightarrow & \text{NP + VP (adv)}\\
\text{PS 2.} & \text{VP} \longrightarrow & \text{aux + MV}\\
\text{PS 3.} & \text{MV} \longrightarrow & \begin{Bmatrix}\text{be + pred}\\ \\ \text{V}\end{Bmatrix}\\
\text{PS 6.} & \text{pred} \longrightarrow & \begin{Bmatrix}\text{NP}\\ \text{adj}\\ \text{loc}\end{Bmatrix}\\
\text{PS 11.} & \text{aux} \longrightarrow & \text{tn}\\
\text{PS 12.} & \text{tn} \longrightarrow & \begin{Bmatrix}\text{pres}\\ \\ \text{past}\end{Bmatrix}
\end{array}$$

Let us see how these phrase structure rules operate to form a sentence. This operation is called a *derivation*:

Let us see how these phrase structure rules operate to form a sentence. This operation is called a derivation:

PHRASE STRUCTURE DERIVATION TREE DIAGRAM

1. S (using rule PS 1)
2. NP+VP+adv (1)
3. NP+aux+MV+adv (2)
4. NP+aux+be+pred+adv (3)
5. NP+aux+be+adj+adv (6)
6. NP+tn+be+adj+adv (11)
7. NP+pres+be+adj+adv (12)



Notice that each step of the derivation comes from one of the phrase structure rules. Notice also that each step rewrites only one item at a time. The last line of the derivation, which we reach when we have run through all the applicable phrase structure rules, is called a terminal string. In order to construct actual sentences, we must add a list of English words, a lexicon, to our grammar. The terminal string of the above derivation is NP+pres+be+adj+adv

rewritten as: The puppy + pres + be + hungry + today
The puppy is hungry today.

. . . .

Section III

TRANSFORMATIONS: SINGLE-BASE

Yes/No Question Transformation:

Change the following statements to questions in which the expected answer is yes or no:

1. Tom sings. ______________________
2. Tom has sung. ______________________
3. Tom is singing.______________________
4. Tom could sing.______________________
5. Tom might have sung.______________________

Notice that in every case, the transformation consists of a rearrangement in which Tn precedes NP. In sentences 2-5, this means that the first aux, which carries the tense, moves to the position before NP.

Tom has sung. → Has Tom sung?
NP Aux MV Aux NP MV

Since we do not say in English Sings Tom? we conclude that we may not move the main verb. Therefore the do-form is required as a substitute auxiliary to carry the tense, and is placed before the NP:

Tom sings → Does Tom sing?
NP aux MV Aux NP MV

An exception to this rule occurs when be or have is the verb:

Jim is captain → Is Jim captain?
Joan has the book → Has Joan the book? or Does Joan have the book?

Wh-Question Transformation:

The following kernel sentence may be questioned in several ways:

The pilot guided the plane skillfully through the clouds
NP_1 NP_2 Man Loc
who? what? how? where?

during a storm.
Tm
when?

WH-questions formed from this kernel are as follows:

WH + NP_1: Who guided the plane skillfully through the clouds during a storm?
WH + NP_2: What did the pilot guide skillfully through the clouds during a storm?

WH + Tm: When did the pilot guide the plane skillfully through the clouds?
WH + Man: How did the pilot guide the plane through the clouds during a storm?
WH + Loc: Where did the pilot guide the plane skillfully during a storm?

Questioning Tm as an example, the steps of the transformation are as follows:

Rearrangement: Place the Tn before the subject.

(a) Did the pilot guide the plane skillfully through the clouds during a storm?

Substitution: Substitute a WH-form for the part to be questioned.

(b) Did the pilot guide the plane skillfully through the clouds when?

Rearrangement: Move the WH-form to the first position.

(c) When did the pilot guide the plane skillfully through the clouds?

Notice that no rearrangement is necessary when the subject is questioned because the WH-form and Tn are already in question position after the substitution.

Exercise:

Show the steps of the transformation in which you question NP_2 in the sentence: Jack studied history diligently in the library last weekend.

(a)

(b)

(c)

Using the above sentence, form questions as follows:

(a) WH + NP_1:

(b) WH + Man:

(c) WH + Loc:

(d) WH + Tm:

(e) Yes/No:

. . . .

TRANSFORMATIONS: DOUBLE BASE

You have learned that transformational grammar assumes that all larger constructions derive from kernel or simple declarative statements. Each kernel has only one predication or verb concept. The double-base transformation, however, has two underlying strings. This means that adjectives, for example, must be embedded or brought into the resultant sentence by a transformation process because they suggest a second predication. In the sentence The kind lady fed the birds, you can see two predications:

Matrix: The lady fed the birds.
Constituent: The lady is kind.

It is this kind of grammatical operation which we are describing in this lesson.

The two underlying strings are called the matrix and the constituent. The transformational operation involves inserting the constituent into the matrix to produce an expanded or more complex construction. CAUTION: The word complex as used here does NOT refer to the traditional complex sentence; rather it is used to describe the resulting sentence of the transformation which is, thus, neither matrix nor constituent.

MATRIX: Horns honk.
CONSTITUENT: Horns are blatant.
TRANSFORMATION: The blatant horns honk.

Relative Clause Embedment

The words who, which, and that are the common relative pronouns that introduce relative clauses. We will use +wh-S as a symbol to show the embedment process of a relative clause in a matrix.

MATRIX: We met the conductor.
CONSTITUENT: The conductor is from San Francisco.
SUBSTITUTION: We met the conductor +wh-S
TRANSFORMATION: We met the conductor who is from San Francisco.

Note that the direct object of the matrix is identical to the subject of the constituent; therefore, who substitutes for conductor in the constituent, becoming a part of the final sentence.

MATRIX: The astronaut returned.
CONSTITUENT: The astronaut went to the moon.

SUBSTITUTION: The astronaut +wh-S returned.
TRANSFORMATION: The astronaut who went to the moon returned.

Note that the noun in the matrix is identical to the noun in the constituent; therefore, who substitutes for astronaut in the constituent and becomes a part of the final sentence.

MATRIX: Chip has a palomino.
CONSTITUENT: Chip is my cousin.
SUBSTITUTION: Chip, wh-S, has a palomino.
TRANSFORMATION: Chip, who is my cousin, has a palomino.

Note that the relative clause, who is my cousin, is nonrestrictive, that is, it is merely additional information that in no way adds definiteness to the noun Chip. Two other observations can be made about the nonrestrictive clause: first, who or which generally introduces this kind of clause; second, a juncture or pause precedes and follows this clause. The juncture is signaled by the commas.

When the wh- form replaces the object of the preposition or object of the transitive verb, who changes to whom.* Likewise, when who replaces an NP before a possessive, who Pos becomes whose.

MATRIX: The librarian retired.
CONSTITUENT: He knew the librarian.
SUBSTITUTION: THe librarian +wh-S retired.
TRANSFORMATION: The librarian -whom he knew- retired.

TRANSFORMATION: ADJECTIVE EMBEDMENT

Any sentence that derives from two underlying strings instead of one requires a double-base transformation. Adjectives, both single-word and larger constructions such as clauses, can become a part of the matrix through the relative clause wh- transformation. A deletion process, del wh-+tn+be, and finally a rearrangement process give us the adjective, the word in our language which attributes to nouns certain qualities: the bright jewels; a monstrous wave; a happy child.

Remembering that these transformations involve two underlying strings, one of which becomes a part of the other, let us follow the process that describes the placement of the adjective in the English sentence.

I visited the octagonal tower.

---

*In spoken English, who usually substitutes for whom; however, in formal writing the who-whom distinction is usually observed.

Write the matrix and the constituent and apply the +wh-S rule in this way:

STEP ONE: +wh-S	MATRIX: I visited the tower. CONSTITUENT: The tower is octagonal. wh- S Rule: I visited the tower which is octagonal.

This embedding process is possible because we have identical items in the matrix and constituent; that is, the object in the matrix and the subject in the constituent are identical. One of these items is therefore deletable. The deletion rule operates to give:

STEP TWO: deletion wh-+Tn+be	DELETION: I visited the tower octagonal.

Finally the adjective is moved in a rearrangement transformation to prenominal position:

STEP THREE: Re-ordering	TRANSFORMATION: I visited the octagonal tower.
STEP ONE: +wh- S	MATRIX: The spider climbed the spout. CONSTITUENT: The spider is energetic. wh- S RULE: The spider which is energetic climbed the spout. wh-S
STEP TWO: Deletion wh- tn be	DELETION: The spider energetic climbed the spout.
STEP THREE: Re-ordering	TRANSFORMATION: The energetic spider climbed the spout.
STEP ONE: +wh- S	MATRIX: The child stared. CONSTITUENT: The child is pensive. +wh- S RULE: The child who is pensive stared. wh- S
STEP TWO: Deletion	DELETION: THe child -pensive- stared.
STEP THREE: Re-ordering	TRANSFORMATION: The pensive child stared.

This three-step process that seems necessary to properly place an adjective may seem complicated. The same set of rules, however, also operates for several other constructions:

1. The monkey (which is) on the leash is my pet.

2. The monkey (which is) gnawing on the leash is my pet.

3. The monkey (which is) gnawing is my friend.

4. The monkey gnawing is my friend.

5. The gnawing monkey is my friend.

Exercise 1: Complete the following transformations:

1. MATRIX: They picked flowers on the hillside.
CONSTITUENT: The flowers were wild.
wh- RULE:
DELETION:
TRANSFORMATION:

2. MATRIX: They sailed the boat at sunset.
CONSTITUENT: The boat was new.
wh- RULE:
DELETION:
TRANSFORMATION:

3. MATRIX: The boys rode at the stables.
CONSTITUENT: The boys were the winners.
wh- RULE:
DELETION:
TRANSFORMATION:

. . . .

Section IV

INTRODUCTION

This paper contains some suggestions for applying transformational-generative grammar to the correction of student errors in writing. After students have been introduced to a new grammar, they will expect continued use of the newly mastered procedures and terminology. They will question, and with justice, any effort to abandon these newer insights and return to traditional concepts for further teaching purposes. We have attempted to discuss some student problems in writing and to provide for their correction by practical applications of transformational-generative theory. In addition to these brief teaching procedures, a list of other errors is appended in an effort to help teachers orient themselves to viewing student errors in this new light and to assist them in describing various errors. The teacher can then apply the methods of our more fully developed plans to the correction of other errors on the list.

Transformation Problem #10: Improper Deletion in Comparative Sentences.

Student Sentences: *I like Joe better than he. I like Joe better than him.

Problem: The student has failed to carry out the comparison. In other words, he has failed to understand the underlying structure of either one of these sentences, and has thus deleted improperly.

Solution: These sentences have different underlying structures.

(a) I like Joe better than he.

Matrix: I like Joe better than SOMETHING(+S)
Constituent: He does like Joe
Embedment: I like Joe better than (He does like Joe)
Deletion: I like Joe better than he does -0-   0.

(b) I like Joe better than him.

Matrix: I like Joe better than SOMEONE (+S)
Constituent: I like him.
Embedment: I like Joe better than (I like him)
Deletion: I like Joe better than -0 - 0 -him.

. . . .

Transformation Problem #12: The Dangling Modifier

Student Sentences:
(a) Walking down the hill, the church is on the left.
(b) Being only seven years old, John's father drove him home.
(c) Reading many books, John is an Irishman.

Problem: The student writes a sentence modifier the constituent sentence of which cannot have the same subject as the matrix sentence. Sentences (a) and (b) illustrate this. Sentence (c) illustrates the case of the student who has grammatical constituent and matrix sentences, but the joining of them produces an ungrammatical, or illogical, result.

Solution: A. Sentence modifiers probably come into being through the operation of three transformations.

(1) The relative clause transformation produces a sentence such as this:

Tom, who was warmly dressed, went outside.

(2) Deletion of who and the addition of -ing to the base form of the verb in the relative clause produce

Tom, being warmly dressed, went outside.

(3) The participial phrase is then front-shifted:

Being warmly dressed, Tom went outside.

B. Underlying the main clause and the relative clause in (1) above are matrix and constituent sentences. To produce a grammatical combination, these sentences must be grammatical and have identical subjects.

C. Analysis and Correction of Student Sentences:

(1) verb + ing
Walking down the hill, the church is on the left.

Matrix: The church is on the left.
Constituent: *The church was walking down the hill.
Correction: Matrix: I saw the church on the left.
Constituent: I was walking down the hill.

Correct Embedment: Walking down the hill, I saw the church on the left.

(2) be + ing
Being only seven years old, John's father drove him home.

Matrix: John's father drove him home.
Constituent: John's father was seven years old.
Correction: Matrix: John was driven home by his father.
Constituent: John was only seven years old.
Correct Embedment: Being only seven years old, John was driven home by his father.

(3) Both matrix and constituent sentences are grammatical and logical, but joining them produces an illogical or ungrammatical sentence.

Reading many books, John is an Irishman.
Matrix: John is an Irishman.
Constituent: John reads many books.

Fried in bacon grease, the guests enjoyed the oysters.
Matrix: The guests enjoyed the oysters.
Constituent: The guests were fried in bacon grease.

. . . .

8. Reaction to the Transformational Grammar:

The phonology, morphology, and history of the language materials were developed in the course of two summers and two winters. All of the units were used at least twice by the participants, and all were revised thoroughly. Consequently, the reactions were based upon extensive experimentation, upon many trials and errors. Unlike the other sections, the transformational grammar material was used experimentally for only one winter in the classroom. The material was not revised extensively by the participants; some of it was extremely elliptical in nature. The comments concerning the transformational materials should be considered extremely tentative; certainly, if the project were to continue for another year, opinions would be revised and some results would be different. In general, however, reaction to the transformational grammar units was extremely favorable; all opinions, whether favorable or unfavorable, were expressed with strength and conviction.

Five main criticisms were levelled against the materials:

1. The senior year is too late to begin the grammar; it should be started much earlier, preferably in the grades. "The twelfth grade is definitely not the place to start this new approach," one participant wrote.

2. Several students complained that the materials involved busy work for the most part; there was no observable practical result to the study. A participant said,"The desire to see immediate practical value in the study kept many of the seniors from learning as much as they could have learned."

3. Some felt that the approach was too scientific; they couldn't adjust to the symbolic nature of the grammar. "I can't see the forest for the trees." Another student felt "...that the use of so many symbols and formulas 'reduced' language to a science, and for that reason he disliked the labeled trees and the derivations. Incidentally, he understood the grammar very well."

4. Some teachers found the materials inadequate in certain respects: "The material on single-base transformations worked out all right, but the double-base transformation unit failed. For some reason or other--probably my own inadequacy--I felt that I was not presenting material that was meaningful to my students. We seemed

to gloss over the surface." "I felt the need for more definite, interesting exercises than I was able to supply."

5. All of the participants felt the need for more time than the units called for. Some felt that the three units should be taught in sequence, over the course of an entire semester.

The favorable reactions were many. Students like the novelty, the freshness. One said, "For the first time, grammar (if this is really grammar) is _fun_." Another wrote, "I don't care whether there is any practical value or not. This has been an exciting project." Secondly, students appreciated the orderly approach, the systematic method of the grammar. "There's a formula to go by. Traditional grammar is mostly guesswork." "I've known the rules all along. Now I know the _reasons_ for the rules." Several commented that the "new" grammar was even more logical and practical than the new math.

The teachers were unanimous in praising transformational grammar as a means of teaching students the structure of English: "Its efficiency and its insights are far superior to those of structural or traditional grammar." "The principal advantage is its dynamism, the fact that it is a process grammar rather than a finite state grammar." All of the participants found their knowledge of the grammar helpful in analyzing their students' writing errors, but some were not convinced that the grammar actually helped students write more accurately and effectively: "The effect of the grammar on my students' compositions is still a question. I don't have enough evidence." "There are easier ways of correcting student writing errors than our transformational materials provide." "Though my students began to see why complex sentences are difficult, and why they made mistakes, the period of study was too short for seeing any marked improvement in composition as the result of transformational grammar." "The grammar gave me a basis for explaining what was wrong with student writing, rather than leaving the student feeling that I just disliked something he wrote for no particular reason."

Some students found that the study aided them in their writing: "They claim that transformational grammar does help them to consciously control increasingly complex structures." " I am able to understand the structure of my sentences better." "Sometimes I am able to spot my mistakes before I make them."

9. Relevance to Writing:

The first objective of the Northern Illinois University Curriculum Center was the development of workable materials in the new grammars, and experimentation with the materials. The materials, their use and their impact, have just been discussed. The second objective was an investigation of the effect of instruction in the new grammars upon student writing. Is there a relevance of the new grammars to the teaching of composition? Statistical evidence concerning the answer to this question was not obtained by the experimenters. An instrument (Form and Content, A and B) was designed (See "Method," "Instruments for Determination and Evaluation of Results" for contents of the instrument), and was used sporadically by the participants. Results indicated that students were more knowledgeable concerning their language after studying the units contained in the materials. However, provision was not made to utilize control sections, and, since students tested usually moved to other courses and other teachers at the end of the semester, there was no opportunity for follow-up tests, re-tests, and continued experimentation. The following information, therefore, is based largely upon the reactions of students and teachers contained in the final report submitted by each of the fifteen participants. (See "Method," "Instruments for Determination and Evaluation of Results for the structure of the reports.") In addition, theme-reading by the project directors and the questionnaires filled in by administrators of the fifteen high schools represented in the experimentation provided some evidence.

The fifteen participants were unanimous in their agreement that the materials in morphology and phonology were useful in teaching spelling, punctuation and diction. The materials were generally used as auxiliaries, to explain and reinforce traditional units. In the section "Reactions to the Materials," quotations indicate the use which teachers made of the units in Phonology, Morphology, and History of the Language. Students themselves had mixed opinions concerning the relevance of the materials to their writing. A few felt that they understood spelling and punctuation more thoroughly because of the work, but most praised the units for their freshness and their intellectual stimulation.

The two directors and the fifteen participants were most keenly interested in the possible effects of the transformational materials upon student writing. In the development of the preceding three units, other aims had been set in addition to the effort to improve student writing. The focus of the transformational materials, however, was upon the relevance of the unit to the improvement of student writing. Many of the class materials were based upon a detailed examination of hundreds of student writing samples and the compilation of hundreds of student errors. Did the transformational materials help students with their writing?

The participants, in their reports, presented generally tentative conclusions. Most agreed that the experimentation did not continue for long enough; if the project had been funded for another year, the units could have been developed more fully and tried out more extensively. All agreed that the high school teacher should be familiar with transformational grammar, that this familiarity can help the teacher with his teaching of composition. The following are typical reactions:

"I have no doubt that all teachers of English composition should know the transformational processes. I do doubt the effectiveness of much of the corrective application of the grammar in composition unless we have far more time in which to present the materials."

"The phonology unit offered some assistance with spelling, but otherwise I believe the transformational grammar showed the greatest relationship to composition. I had the feeling as I was working with it that it had two definite helps to offer: It enabled me to teach nominalization, coordination, embedment, etc. from a positive 'how-to' standpoint, rather than merely criticize these operations when they were poorly performed. Also, it gave me a basis for explaining what was wrong with student writing, rather than leaving the student feeling that I just disliked something he wrote for no particular reason. For example, the phrase structure rules enabled me to help a few students who had mental blocks against certain types of kernels, especially students who preferred Type I sentences to other types."

"Transformational grammar was helpful in so far as it made students aware of possibilities within the language in a deeper sense than conventional exercises in parallelism, etc. In my opinion, however, to have the material take hold on a deep permanent basis, it should be introduced earlier and used constantly in all composition work at all levels."

"The grammar aided me to help students see under and into the intricacies of the language, and the potential for subtlety and nuance that is inherent in the structures of the language, independent of the lexicon."

"Transformational grammar helped me so much with grading themes that I enthusiastically endorse any recommendation that all high school teachers become well acquainted with the new grammar."

"I certainly would feel obsolescent if I didn't continue to use a transformational correction system in my theme evaluations. It's a good feeling to be able to skip the 'vague' and 'awk' markings and instead give specific directions to the student."

Some participants, however, were not convinced by their experimentation that students wrote more effective and accurate prose because of classroom instruction and drill in transformational grammar:

"It is hard to see practical applications to composition without a more thorough grounding in the new grammar than I was able to give my students."

"I cannot say the transformational grammar was effective as a corrective approach to composition...."

"There are far easier means of correcting errors than our materials provide."

Students themselves were enthusiastic about the insights into their own writing which the new grammar gave them:

"Nearly all of my students claim that transformational grammar does help them to consciously control increasingly complex structures."

"The grammar helped me," a student said. "I understand the structure of the sentence better, and it may be possible for me to see and understand my mistakes before I make them."

"Many students professed a new understanding of more complicated sentence structures. In a satisfying number of cases, these were students who had been frequent writers of awkward sentences. They claimed now to see how clauses were put together."

"Several students indicated in their subjective reactions that they had become much more aware of their own sentence structure and felt that they would be more careful in their future writing."

10. Adjunctive results:

The following quotations from reports of participants illustrate and substantiate the general impact of the Northern Illinois University Curriculum Center and its work. The reactions of participants and others epitomize the effect of instruction in the new grammars upon attitudes toward the study of linguistics, the third objective of the project.

a. Impact upon colleagues

"When our project began, some of my colleagues felt it would be a waste of time, because the new grammars were a passing fad. They are taking it more seriously now! Two incidents showed me that interest was spreading: the presence of the math department chairman at a lecture I gave to English teachers, and the history teacher who asked me to define transformational grammar."

"I was instrumental in planning District Four's Language Arts Conference. The title I selected was 'Introduction to Linguistics.'"

"I talked about linguistics to the Board of Education."

"I have been appointed to the District Curriculum Research Council because of my work with the N.I.U. Center."

"I have conducted two in-service institutes on linguistics."

"Our Latin teacher is using the morphology materials."

"I have begun a team-teaching experiment with our speech teacher. The basic text we are using is the Phonology unit."

"All of our English and foreign language teachers examined our material. One English teacher told me he had never seen so many teachable units on language before. Another said that for years she has been trying unsuccessfully to make sense out of articles and texts in transformational grammar. Now, after examining our materials, she says she has a far better idea of what some of these articles and texts are talking about."

b. Impact upon the participants:

"The project is unquestionably the most productive and practical experience in my training as a teacher."

"I have never had a college course which matched the seminars in productivity and value."

"I am extremely pleased that I was invited to enter this project, and as a result I have changed my teaching for life."

c. Impact upon students:

"Grammar was always a bore. But now I'm beginning to like it."

"One girl was asked what value the year's work in linguistics had had for her. She replied that she was glad to know more about her language, and that was value enough."

"I still don't know very much about our language. But at least now I think about it. And I never did that before."

Perhaps the best indication of the general impact of the linguistics materials upon students is an experiment tried by a participant. The week before she began using the materials developed by the project, she asked students in a class of high school seniors to write a brief essay defining "language." At the end of the school year, after the seniors had worked through several units in linguistics, she asked the same students to define language in the light of their new insights. Here are excerpts:

September

"All people use it to express themselves."

"Language deals with proper use of verb, adverb, noun, etc."

"Life could not exist without language."

"All languages are unusual as well as fascinating."

"In all schools, colleges, and universities, English is a basic requirement."

"A language is a center of a group."

"It is by far the best form of communication because it is so easy to use."

"Throughout the entire world, language differs greatly."

June

"Language is a system of spoken sounds and written symbols which are used in certain patterns to convey thoughts coherently."

"Sentences can be broken up into their components, which in turn can be classified and broken up further until one gets to the words that make up the sentence."

"Just as there are basic or root forms of words, so there are basic or kernel sentences."

"Writing is just symbols, called letters, and groups of symbols, called words, and groups of words, called sentences."

"Language is a mixture of sounds, words, and constructions."

"A single language varies too, depending upon the area in which it is spoken."

"Language is always growing."

"Language is the function of words and the syntax of a sentence."

d. Impact upon administrators:

Eleven administrators responded to the questionnaire sent to them. The following is a summary of results:

Nine felt that the experimental work had enhanced the total school program: "It has set a precedent whereby experimentation is an accepted part of the school climate." "It has given our English department a sense of participating in curriculum change." "It has effected a correlation of speech and English." "It is helping our Latin and modern language programs." The two negative answers were based upon inadequate information.

Nine observed interest on the part of other teachers in the system: "All of our English teachers have been enthusiastic about the program."

To the question "Have you observed any reactions, favorable or unfavorable, on the part of the students?" the answers were six "yes" and five "no." Three negative replies were qualified: "I noted enthusiasm the only time I visited the class, but this was inadequate evidence." Another administrator said "Not particularly," and the third wrote "No noticeable opposition." The favorable replies are summarized by these two: "I have observed seniors carrying over their linguistics work into the speech class; our Latin teacher says students have a helpful linguistic background." "Students seemed to like the new approach. I feel they found the phonetics particularly interesting and different."

Administrators were unanimous in their positive answers to the next question: "Have you observed any changes in the attitude, work, or accomplishments of the participating teacher during this project?" The following are typical: "Yes, her enthusiasm has been infectious. Teachers who formerly were not interested became curious, and then participants." "There has been more interest in curriculum and curriculum change." It is significant that seven administrators used the word "enthusiasm" to describe the attitude of the participating teacher toward the materials and the project.

Question five asked the administrator to consider any change in his own attitude toward linguistics as an approach to English which resulted from the use of N.I.U. Curriculum Center materials. Nine said their attitude had changed, and two said they had inadequate exposure to the materials: "I realize the need for flexibility in language study." "Deeper insight." "From negative to positive." "I think we need to see it in operation for a longer period of time."

Questions six and seven concern specific ways in which materials developed by the project affected curricula and selection of texts. Five administrators indicated that new, linguistically-oriented texts had been adopted for next year; three indicated that they had inadequate information to answer the question, and two answered "yes" without comment.

Question eight, "Do you have any questions about the linguistic approach to the teaching of English?" was answered "no" by seven. Two of the four who answered "yes" stated that they needed more information concerning the project, and two made no comment. One said, "I would like to see a longer term experiment."

The final question asked the administrator to comment on the extracurricular effect of the N.I.U. Curriculum Center: "Did your school participate in any in-service programs, institutes, etc., as a result of the use of the linguistic materials developed by the Curriculum Center?" Nine answered "yes" and one answered "no" without comment. Six mentioned specific in-service institutes and workshops resulting from the experiment; three said that experimentation with the materials was carried on in speech and foreign language courses, and in an elementary education language arts class.

CONCLUSIONS

In the original proposal for Project Number H-144, the director cited three problems which emerged from his study of the teaching of English grammar and composition at the high school level: the inadequacy of conventional methods of teaching grammar and composition in high schools, the lack of adequate texts by which the new structural and transformational grammars could be transmitted to teachers and students, and the lack of experience in devising materials and methods for teaching the new grammars. From the examination of these problems, the director proposed for the project three specific objectives. The first objective was the development of materials in structural and transformational grammars for use in senior high school classrooms. This objective was reached very successfully. The 566 pages of materials which were developed and perfected by the Curriculum Center have been, and are being used with profit in high school classrooms over northern Illinois. In addition, these same materials, circulated by the English Institute Materials Center of the Modern Language Association, were used in many institutes throughout the United States. The third most popular unit distributed by the Materials Center in 1967 was the Phonology, developed by the Northern Illinois University Curriculum Center, which was used in 49 institutes; the N.I.U. Morphology was used in 42 institutes and the History of the Language in 37 institutes. There is no question that the first objective of the Northern Illinois University Curriculum Center, the development of workable materials, was pursued to a completely satisfactory conclusion.

The second objective of the Center was the investigation of the effect of instruction in structural and transformational grammar upon student writing. Tentative studies and concomitant suggestions had been made by Kellogg Hunt, Frank Zidonis, and Verna Newsome. But the methods were inadequate for use at the high school level; no comprehensive, sustained, controlled study had been made of the relevance of the new grammars to the improvement of high school writing. At the outset of the project, drafts of instruments were devised and plans were made to measure the effectiveness of the new materials being developed on the writing of the students who were to use them. As the project continued, however, the focus shifted. Work on objective two was postponed; the objective became subordinate to the first and third. Reasons for this shift are clear: The necessarily very thorough instruction of the fifteen participants in structural and transformational grammar occupied much more time and effort than the directors had foreseen;two-thirds of the first summer was devoted to the study of phonology and morphology, and only at the end was a structural syntax discussed. Second, the development of materials at the end of the first summer was continued into the winter, with the result that experimentation was somewhat delayed and control sections difficult to utilize. This fact, and the adaptable nature of the materials resulted in the third reason: Material was used often as it was developed, or soon afterward, in the context of a literature unit, the result being that establishment of a control section in a class which was occupied with another unit or with a different part of the literature unit was difficult, if not impossible. Thus one virtue of the materials—their capability of incorporation into the context of a senior course in literature—contributed to the progressive deemphasis of objective two. Finally, time ran out before some of the transformational materials could be developed adequately and used for protracted enough periods to determine the relevance to student writing. And it was the transformational materials that would hold the most promise, the directors had anticipated at the outset of the project.

Despite the lack of statistical evidence, three conclusions concerning the effect of the new grammars upon student writing can be drawn: The Phonology and Morphology units were helpfully used in conjunction with traditional units in spelling, punctuation, and the parts of speech. Participants and students unanimously agreed that the units were helpful in these respects.

Directors and participants unanimously agreed that the transformational materials held much promise for future experimentation. Most participants could not say that the materials had helped their students' writing. All reiterated that inadequate time was allowed for experimentations. Students, however, contended that the new insights received as a result of the transformational units carried over into their writing. They were more aware of sentence monotony, of vague reference, of dangling modifiers, they said. And most students stated with conviction that the new grammar helped them understand why they made their mistakes. Certainly the participants agreed on one relevant observation: Knowledge of transformational grammar helped them understand the reasons underlying their students' errors, and provided them with an explicit insight into ways of explaining both the errors and the corrections. Some of the most original work of the project occurs in the unit designed to help the teacher use transformational grammar to analyze his students' writing mistakes and make an accurate and effective diagnosis and a helpful and constructive prognosis.

The third specific objective of the project was the investigation of the effect of instruction in the new grammars upon student and teacher attitudes toward language study: the general impact of the experiment. In the opinion of the directors and participants, the success in reaching this objective was achieved completely. All fifteen participants are continuing to experiment with the materials developed by the Center; twelve have incorporated at least a portion of the units into their teaching syllabi. The three exceptions have accepted positions as editors in the area of linguistics for a large Midwest publishing firm. All participants are completely convinced that work in structural and transformational grammar should be included in high school curricula; eleven of the fifteen convinced administrators in their schools that the new grammars were defensible and viable. Students, almost without exception, were fascinated and stimulated by the new materials. A large segment commented that as practical aids, the work in the new grammars was not feasible as late as grades eleven and twelve; this group suggested strongly that the material be introduced into elementary schools. Only a handful felt that the synthesis of the new grammars and traditional grammar was not successful, that the new materials destroyed their linguistic foundation built in the grades. The majority held that the new approaches complemented the classroom traditional approach.

Perhaps the strongest indication of the success of the project in stimulating interest in language study among the participants is the extent to which they developed and conducted in-service programs of one sort or another. At the end of the summer of 1966, the group met for several meetings, in their spare time, and, with the assistance of the associate director, developed a comprehensive program for in-service training of high school teachers, utilizing materials developed by the Curriculum Center. The group reproduced this program and distributed it widely throughout northern Illinois. Each of the fifteen participants conducted at least one in-service program in his own school; several led as many as three during the two-year period. Two participants taught junior college courses in the new grammars, using project units; one spoke before a large linguistics institute at Northern Illinois University.

The Curriculum Center also developed a selected bibliography of materials in linguistics to enable high school English departments to assemble useful libraries of the latest works in structural and transformational grammar. This bibliography was distributed widely among Illinois high school teachers, and was published in the April issue of the *Bulletin* of the Illinois Association of Teachers of English.

In the opinion of the two directors of the project, the fifteen high school teachers who participated, and eleven of the administrators of the high schools in which the experiment was conducted, two of the announced objectives were attained completely;

one was partially attained. The specific conclusions which can be drawn from the project are these:

1. Structural phonology and morphology, and transformational syntax can be taught successfully at the senior high school level to students thoroughly indoctrinated and trained in classroom conventional grammar, and to those who know very little of any grammar.

2. The new grammars can be taught successfully by instructors who, though their formal training in grammar is traditional, train themselves to use the new materials in institutes and by self-study.

3. Structural phonology and morphology can be incorporated into courses in speech and foreign language, and can be correlated usefully with these disciplines.

4. The materials developed by the N.I.U. Curriculum Center can be incorporated successfully into the syllabi of senior high school literature, grammar, and rhetoric courses. The phonology, morphology, and history of the language are more easily "plugged in" than the transformational units, which are more successful if taught sequentially.

5. The materials in phonology, morphology, and transformational grammar can make students more sensitive to their writing errors, and can aid them in the correction of certain of these errors.

6. Transformational grammar can be used profitably by the teachers in analyzing the reasons for student writing errors, and can provide the teacher with explicit machinery for suggesting corrections of the errors.

7. The new grammars can make students more sensitive to their language and its structure.

8. The new grammars can stimulate and motivate student and teacher to further study of their native language.

9. Most of these materials could profitably be introduced much earlier in the language arts curriculum, perhaps even in junior high school.

RECOMMENDATIONS

Certain obvious recommendations emerge from the work of the Northern Illinois University Curriculum Center, together with some reservations and implications for the future. First, before the high school teacher uses materials in the new grammars he should be familiar with them. This familiarization procedure is not only a matter of participating in an N.D.E.A. Institute in linguistics for a few weeks; such training can be a helpful introduction, a beginning. But it must be followed by consistent and thorough in-service work of some sort. The fifteen high school teachers who participated in the Northern Illinois University project were highly competent people, all of whom had been enrolled in at least one college course in linguistics. Yet training these people thoroughly in the new grammars occupied much more time than the directors had anticipated. When they were trained, however, the project progressed rapidly and successfully.

High schools should provide extensive linguistic libraries for English instructors. Frequent departmental meetings to discuss the impact of linguistics on the curriculum should be held. Ideally, released time should be allowed English teachers for self-study and for seminars in linguistics. Certainly the success of any work in structural or transformational grammars depends largely upon the knowledge, conviction, and ability of the instructor.

Secondly, much of the success of the Northern Illinois University project resulted from the freedom with which the participants were allowed to use the new materials. Freedom to experiment must be a concomitant of any use of the new grammars, especially at the high school level. Teachers must be able to discard units which are unsuccessful, or revise them freely. Experimentation must take place. High school students differ greatly in their preparations and backgrounds; some may have been introduced to a comprehensive phonology at third-grade level, while others may know nothing at all of the sound system of English. The teacher must know his material and his class in order to select and perhaps adapt useful units.

Thirdly, the teacher must resist the temptation to cover too much material. The danger is that, in the crowded curricula of eleventh and twelfth grade English, the teacher will allow too little time for proper instruction in the new approaches to grammar. Because he wants his students to know as much as possible, he makes unreasonable assignments, or provides too little time for questions and reactions, or skims over important points. No complete structural or transformational grammar can possibly be taught as a part of a senior literature course. The teacher, therefore, should make a point of selecting a unit which can be taught, and taught well, in the allotted time. In the opinion of the directors, phonology, morphology, or history of the language units are easier to adapt for non-sequential high school use than the transformational syntax, which should be sequential.

Fourthly, the transformational materials are not as easily adapted for use at the high school level as are the structural phonology and morphology. This transformational material should occupy at least a year or perhaps longer, and should be sequential in nature. This recommendation, it should be remembered, is based upon materials which were not fully developed. Clearly, the project needed another year, at least, to refine available materials and to develop fully the extensive lesson plans necessary to teach the wide variety of imbedment transformations that characterize high school writing. Development of such materials would fruitfully expand the materials necessary for a sequential program in transformational grammar for high school. The thinking of the directors at present is that initially, at least, the presentation of transformational materials should be normative.

Finally, the directors and participants of the Curriculum Center unanimously recommend the use of materials in structural and transformational grammars in grades eleven and twelve. In addition to materials developed by the Center, increasing numbers of practical, helpful textbooks are being published for teaching linguistics in senior high school. Even though students have been thoroughly trained in traditional grammar from grades one through ten, they can profit greatly from units in the new grammars.

Two quotations, one from a participant who taught all of the materials developed by the Northern Illinois University Curriculum Center, the other from a written evaluation by one of his students, will perhaps appropriately conclude the Final Report concerning the work of the Center:

The participant wrote: "...our school is steadily but quietly moving to the linguistic approach for teaching both grammar and composition. Certainly, our project has given us all several new dimensions. I am a better teacher of grammar and composition now than I was before the summer of 1965; my students are far more aware of their language and its structure than they would have been had I not been accepted as a participant."

The student commented: "For me to understand a subject, it must be presented in an orderly manner. During the time we had in linguistics, order was given to my previously acquired knowledge of grammar. Also, I never knew grammar could be so much fun."

IMPLICATIONS

The significance of the research conducted at the Northern Illinois University Curriculum Center pertains only secondarily to the model of grammar in which the English language was presented. The significance lies in our demonstrating that a systematic, intensive experience with the realities of linguistic structure can bring about a great increase in interest in the study of language structure and history and, probably, an increase in the normal rate at which student sentence structure becomes more complex, thus more mature.

If current and subsequent studies bear out these findings at a wider range of grade levels, this increase in interest and apparent maturity of sentence structure might be of a magnitude sufficient to justify our considering the curricula that produce them as extremely valuable supplements to the several staples of the English curriculum.

Our study has certainly confirmed an ancient if much-questioned belief about the grammar component in the English curriculum. We have eschewed the conscious imitation of existing sentences and the application of most of the conventional grammatical dogma. Instead, we have attempted to present linguistic data as it may be consistent with the sentence-forming process. While linguistic transformations are part of the linguistic curriculum, transformational grammar is not a program of rhetoric or composition. Yet, while it cannot replace these programs, it is completely compatible with all the approaches to English composition known to the Project Directors. In the manner in which we have presented the transformational grammar it may be less compatible with the English curriculum than if it had been presented sequentially over a year or two.

We hesitate to advocate the wide-spread use of transformational grammar in the schools at the present time because there is a great deal yet to learn about its effectiveness. While we are certain that teachers can be convinced of the efficacies of transformational grammar, we still do not know how to adapt either the vocabulary or the number and complexity of embedment operations to a given grade level, nor do we have much of an idea about how long the motivation which the grammar enhances can be maintained or how long it actually takes for the effect of transformational teaching to be consistently reflected in student writing.

It is very possible that this teaching will pay greater dividends if it is begun in the elementary grades. The format of presentation would have to be somewhat different from what it was in the materials developed at the Northern Illinois University

Curriculum Center. Problems in the phrase structure grammar as well as single-base transformation problems could be presented as language-building games not necessarily contingent upon the study of grammar.

Introducing the grammar in the elementary or Junior High School grades, we should probably sacrifice some degree of explicitness for the surface description of a relatively wide range of sentence types. The description would thus appear as phrase structure and transformational rules, acquainting the student with the general characteristics of a transformational syntax, but it would lack the explicitness necessary to produce a large number of sentences. This kind of progression would avoid contact with the initially-puzzling abstract quality of current transformational grammars.

Incorporating essentially this kind of an approach at the Northern Illinois University Curriculum Center, we have managed to develop what might be called a discovery-oriented program. This procedure disabuses the student of the notion that his conventional grammar, or any grammar for that matter, has "all the answers" about the structure of English. Thus, the student is led to find some answers from himself, to theorize about language in much the same manner as linguists do on the basis of his own utterances as well as on the inadequate formulations of his previous grammatical learning. The student, then, increases his own descriptive ability by reformulating existing theories.

Our work has not been undertaken to prove that the study of grammar should remain a part of the discipline of English. In our view, there is no issue concerning the often-raised question about whether the study of linguistic structure has a place in the secondary or primary curriculum. The critical point, and one with which we have been vitally concerned, is that the content of linguistic study must be interesting and intellectually satisfying. The surest way to mitigate the fundamental integrity of any subject matter is to promote its value as an instrument to some practical, immediate goal which is not integral to the subject matter itself. The study of grammar in the schools has been plagued for years by tendencies in this direction. The functional grammar movement of the forties and early fifties advocated these practical goals as do today's attempts to promote structural and transformational grammars as novel, and complete, approaches to the teaching of composition. Thus, it would be a disservice to the potential of any theory of linguistic description to place upon it the meaningless burden of being the vehicle for the teaching of composition.

SUMMARY

The Northern Illinois University Curriculum Center addressed itself to three general problems: (1) the inadequacy of conventional methods of teaching grammar and composition in high schools, (2) the lack of adequate texts by which the new grammars can be transmitted to teachers and students, and (3) the lack of experience in devising methods to teach the new grammars. Examination of these problems led to the establishment of the general purpose of the Center: the development of workable materials in structural and transformational grammar for use in eleventh and twelfth grade English classes, and experimentation concerning the effect of using the materials. The three specific objectives were (1) the development of the materials, (2) the investigation of the effect of instruction in structural and transformational grammars upon student writing, and (3) the effect of instruction in the new grammars upon student and teacher attitudes.

The methods used in the investigation were these: Fifteen experienced high school teachers were carefully selected to participate in the project. During the summer of 1965, the fifteen participants, the director, and the associate director met on the campus of Northern Illinois University in DeKalb to study a structural phonology, morphology, and syntax. The seminar met three hours a day, five days a week. Using the extensive Curriculum Center library, the director and his associate undertook detailed and comprehensive instruction in phonology and morphology. By the end of the summer session, the participants had learned phonology and morphology, and had developed about three hundred pages of materials for use in the high school classroom. These units, assembled in three groups (Phonology, Morphology, and History of the Language), were used experimentally in the classrooms of the participants during the winter of 1965-66. The materials were revised and expanded in the course of the experimentation.

The seminar reconvened on the campus in the summer of 1966. The first task was the final polishing and editing of the materials in Phonology, Morphology, and History of the Language. Most of the classroom time was spent in a detailed study of transformational grammar. In the last week of the summer session, a few beginning teaching units in transformational grammar were developed by directors and participants.

Procedure for the winter of 1966-67 was much the same as that for the preceding winter. Participants worked with the materials and revised them, the Director wrote additional materials, and the directors visited the classrooms and observed the materials in use.

In May of 1967, the group met on campus in an all-day session, at the end of which rough drafts of the units in transformational grammar were completed. The summer of 1967 was devoted to the expanding, revising, and duplicating of the four units in transformational grammar, and to the preparation of the Final Report.

The principal result of the Curriculum Center was the development of 566 pages of workable materials in structural and transformational grammars. The materials were divided into four sections. The first group, Phonology, consists of 160 pages. Included are a short overview to help the teacher in his own mastery of phonemics, and day-by-day lesson plans for a fifteen-day unit. Also provided is additional resource material for possible extension beyond the fifteen days. Alternate lesson plans, exercises, tests, an annotated bibliography, a glossary, and suggested visual aids are included.

The second group, Morphology, consists of 113 pages and two parts. The first part is intended to complement the grammar which high school students already know; the second part is composed of teaching materials.

The third group of materials, History of the Language, is composed of four parts: History of the Sounds of English, Development of the Grammatical Signals of English, Historical Development of English Spelling, and Etymology. Included with each of the parts are objectives, an explanatory note to the teacher, a list of teaching situations to which the part can be adapted, comprehensive daily lesson plans, visual materials, and an annotated bibliography.

The fourth group of materials, Transformational Grammar, contains four parts: Part I, An Introduction to Transformational Grammar, defines and illustrates the approach; Part II presents the phrase structure rules, with teaching suggestions; Part III describes and illustrates certain single-base and double-base transformations; Part IV, Transformational Grammar and Writing, is a suggested approach for the use of transformational grammar in the analysis of student writing errors. This section is not designed primarily as a teaching unit, but as a guide to assist the teacher in a transformational analysis and correction of student errors.

The four groups of materials developed by the Center can be used to plan a useful, sequential year's work. Or they can be effective supplements to the high school language arts curriculum. The high school teacher of English, by using these materials, can build a new comprehensive syllabus, or he can incorporate into the body of his old syllabus as little or as much of the new grammars as he chooses.

Reactions to the use of the materials were determined by personal observations of the director and his associate, by structured final reports from the participants, by student observations, and by a tabulation from a questionnaire sent to administrators in each of the fifteen participating high schools. The consensus was that the materials were very usable because of their organization, their originality, their clarity, and their adaptability. The first objective of the Center, the development of workable materials, was achieved.

The second objective was the investigation of the effect of instruction in structural and transformational grammars upon student writing. As the project continued, however, the focus shifted. The thorough instruction of the fifteen participants in the grammars took more time than the directors had foreseen. In addition, development of materials interfered with the investigation of the impact of the grammars on writing. Time ran out before the problem could be thoroughly investigated. Three conclusions were reached, however. First, the phonology and morphology units were helpfully employed in conjunction with traditional units in spelling and punctuation. Secondly, though the teachers could not state definitively that the transformational materials had helped student writing, the students themselves were convinced that they were writing with more variety and accuracy because of their understanding of the deep structure of their sentences. All participants agreed that knowledge of transformational grammar helped them with an explicit insight into ways of explaining both the errors and the corrections.

The third objective of the project was the investigation of the general impact of instruction in the new grammars upon student and teacher attitudes toward language study. Success in reaching this objective was achieved completely. All participants are completely convinced that work in structural and transformational grammars should be included in high school curricula; most administrators stated that the new materials added much to their school curricula; students were fascinated and stimulated by the new materials. Inservice programs and linguistic libraries were developed by all participants.

The following eight specific conclusions were drawn by directors and participants:

1. Structural phonology and morphology and transformational syntax can be taught successfully at the senior high school level to students who have been trained in conventional grammar.

2. The new grammars can be taught successfully by instructors who, though their formal training in grammar is traditional, learn the new approaches through self-study.

3. Structural phonology and morphology can be incorporated into courses in speech and foreign language.

4. The materials developed by the N.I.U. Center can be incorporated successfully into the syllabi of senior high school literature, grammar, and rhetoric courses.

5. The materials developed can make students more sensitive to their writing errors, and can aid them in the correction of certain errors.

6. The material in transformational grammar can be used profitably by teachers in analysing the reasons for student writing errors, and can provide the teacher with explicit machinery for suggesting corrections of the errors.

7. The new grammars can make students more sensitive to their language and its structure.

8. The new grammars can stimulate and motivate student and teacher to further study of their native language.

9. Most of the materials could profitably be introduced much earlier in the language arts curriculum, perhaps even in junior high school.

The following five recommendations emerge from the two-year project:

1. Before the high school teacher uses the new materials, he should prepare himself thoroughly. In-service institutes, N.D.E.A. programs, and, most important, self-study are essential. High schools should be encouraged to assemble linguistic libraries, and provide released-time for study of linguistics.

2. The teacher must have absolute freedom to experiment with the new materials. He must be able to select and adapt the units he teaches to compensate for differences in preparation of his students.

3. The teacher must not attempt to cover too much material. No complete structural or transformational grammar can be taught as a part of a senior English course. The teacher must therefore select

his unit carefully to fill the time slot allotted in the syllabus.

4. Transformational materials are not as easily adapted for non-sequential use at the high school level as are the structural phonology and morphology, and the units in history of the language. Transformational units should be sequential, and should ideally occupy a full semester or perhaps a year. Clearly, therefore, transformational grammar is not as adaptable for use at senior high school level as phonology, morphology, and history of the language.

5. Finally, the directors and participants of the Northern Illinois University Curriculum Center unanimously recommend the use of materials in the new grammars in grades eleven and twelve. Even though students have been thoroughly trained in traditional grammar from grades one through ten, they can profit greatly from materials in the new grammars.

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